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OF

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VOL. XXI.

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OF

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NOTICE.

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The Council think it proper to state that the authors of the several communications are alone responsible for the statements, reasonings, and opinions contained in their respective papers.

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August, 1888.

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1883 Simon, Sir John, K.C.B., D.C.L., LL.D., F.R.S., Consulting Surgeon to St. Thomas's Hospital; 40, Kensington Square, S.W.

1875 Williams, Charles James Blasius, M.D., F.R.S., Physician Extraordinary to H.M. the Queen; Consulting Physician to the Hospital for Consumption and Diseases of the Chest; Villa du Rocher, Cannes.

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1874 Billroth, Theodor, M.D., Professor of Surgery in the University of Vienna.

1874 Charcot, J. M., M.D., Physician to the "Hôpital de la Salpétrière."

1881 von Esmarch, Friedrich, M.D., Professor of Surgery and Director of the Surgical Clinique in the University of Kiel.

1881 Mazzoni, Costanzo, Professor of Surgery at the Royal University of Rome, and Surgeon to the Hospital of San Giacomo at Rome.

1881 Ollier, Leopold, Honorary Surgeon to the Hôtel Dieu of Lyons.

1881 Pasteur, L., Member of the Institute (Academy of Sciences) of Paris.

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1879 ADAMS, JAMES EDWARD, Grately, Andover, Hants. *Trans.* 1.

1879 ADAMS, WILLIAM, Tower Lodge, Regent's Park Road, Gloucester Gate, N.W.

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1884 ADENEY, EDWIN LEONARD, M.D., 3, Sion Terrace, Mount Sion, Tunbridge Wells.

1870 †ALLBUTT, THOMAS CLIFFORD, M.D., F.R.S., Consulting Physician to the Leeds General Infirmary 35, Park Square, Leeds. *Trans.* 3

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1871 Althaus, Julius, M.D., Physician to the Hospital for Epilepsy and Paralysis, Regent's Park; 48, Harley Street, Cavendish Square, W. (C. 1879–81.) *Trans.* 5.

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1887 Arkle, C. J., M.D., University College Hospital. *Trans.* 1.

1885 Armstrong, Henry George, Heathcote, Crowthorne, Berkshire.

1888 Armstrong, Hugh.

Orig. Memb. Arnott, Henry. (C. 1871–5.) *Trans.* 3.

1880 *Baker, Henry Francis, Assistant Surgeon to the Royal Orthopædic Hospital, 5, Duchess Street, Portland Place, W. *C.S.* 1.

Orig. Memb. Baker, W. Morrant, Surgeon to St. Bartholomew's Hospital; Consulting Surgeon to the Evelina Hospital for Sick Children; 26, Wimpole Street, Cavendish Square, W. (C. 1873, V.P. 1884–5.) *Trans.* 7.

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1883 Ballance, Charles Alfred, M.B., Assistant Surgeon, West London Hospital; Demonstrator of Anatomy, St. Thomas's Hospital; 56, Harley Street, Cavendish Square, W. *Trans.* 1, *C.S.* 2.

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1882 Barker, Frederick Charles, M.D., Surgeon-Major, Bombay Medical Service, India [care of Arthur Barker, Esq., 87, Harley Street].

1875 Barlow, Thomas, M.D. (*Hon. Secretary*), Physician to University College Hospital, to the Hospital for Sick Children, Great Ormond Street, and to the London Fever Hospital; 10, Wimpole Street, Cavendish Square, W.C. (C. 1880–82, S. 1888.) *Trans.* 10, *C.S.* 2.

1888 Barrs, A. G., M.D., 22, Park Place, Leeds.

1888 Barton, Edwin A., University College Hospital.

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1888 Batterham, John Williams, M.B., B.S., London Road, St. Leonard's.

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1885 BENNETT, A. HUGHES, M.D., Assistant Physician to the Westminster Hospital; 76, Wimpole Street, Cavendish Square, W. *Trans.* 2.

1878 BENNETT, STORER, Dental Surgeon to, and Lecturer on Dental Surgery at, the Middlesex Hospital; Dental Surgeon to the Dental Hospital of London; 17, George Street, Hanover Square, W.

1874 BENNETT, WILLIAM HENRY, Surgeon to St. George's Hospital; 1, Chesterfield Street, Mayfair, W. *Trans.* 3.

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1883 Bradshaw, James Dixon, M.B., 30, George Street, Hanover Square, W.

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1868 Bright, George Charles, M.B., 29, Lüttichen Strasse, Dresden.

1868 Bright, John Meaburn, M.D., Forest Hill, S.E.

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Orig. Memb. Broadbent, William Henry, M.D. (*President*), Physician to, and Lecturer on Medicine at, St. Mary's Hospital; Consulting Physician to the London Fever Hospital; 34, Seymour Street, Portman Square, W. (C. 1871–3, V.P. 1881–3, P. 1887-8.) *Trans.* 17.

1887 Brock, J. H. E., M.B.. B.S., Adelaide Road, N.W.

Orig. Memb. Brodhurst, Bernard Edward, Surgeon to the Royal Orthopædic Hospital; 20, Grosvenor Street, W. *Trans.* 2.

1876 Browne, George Buckston, 80, Wimpole Street, Cavendish Square, W.

1887 Browne, Oswald Auchinleck, M.B., Casualty Physician to St. Bartholomew's Hospital, and Physician to the Royal Hospital for Diseases of the Chest; 6a, Bedford Square, W.

1883 Bruce, John Mitchell, M.D., Physician to, and Lecturer on Materia Medica at, the Charing Cross Hospital; Assistant Physician to the Hospital for Consumption, Brompton; 70, Harley Street, W.

Orig. Memb. Bryant, Thomas, Consulting Surgeon to Guy's Hospital; 65, Grosvenor Street, Grosvenor Square, W. (C. 1872, V.P. 1876–7, P. 1885–86.) *Trans.* 8.

ELECTED

Orig. Memb. BUCHANAN, GEORGE, M.D., F.R.S., Medical Officer of the Local Government Board; 24, Nottingham Place, W. (C. 1877.)

1884 BUCK, WILLIAM ELGAR, M.D., 5, Welford Road, Leicester.

1886 BULL, WILLIAM C., M.B., 45, Curzon Street, May Fair, W.

1881 BURNET, ROBERT WILLIAM, M.D., 6, Upper Wimpole Street, Cavendish Square, W. *Trans.* 1.

1879 BURTON, WILLIAM EDWARD, 24, Wimpole Street, Cavendish Square, W.

1887 BUTLER-SMYTHE, ALBERT CHARLES, Senior Surgeon to the Grosvenor Hospital for Women and Children; 35, Brook Street, Grosvenor Square, W.

1881 BUTLIN, HENRY TRENTHAM (C), Assistant Surgeon to, and Demonstrator of Practical Surgery and Diseases of the Larynx at, St. Bartholomew's Hospital; 82, Harley Street, Cavendish Square, W. (C. 1887–8.) *Trans.* 5.

1871 BUTT, WILLIAM F., 48, Park Street, Park Lane, W.

1884 BUXTON, DUDLEY WILMOT, M.D., B.S., Administrator and Teacher of the Use of Anæsthetics in University College Hospital; Anæsthetist to the Hospital for Women, Soho Square, and to the London Dental Hospital; 82, Mortimer Street, Cavendish Square, W.

Orig. Memb. BUZZARD, THOMAS, M.D., Physician to the National Hospital for the Paralysed and Epileptic; 56, Grosvenor Street, W. (S. 1870–2, C. 1873–6, V.P. 1880–1.) *Trans.* 14, *C.S.* 1.

1886 CAHILL, JOHN, 12, Seville Street, Lowndes Square, S.W.

1883 CARTER, FREDERICK HEALES, Eaton Villa, Bellevue Road, Upper Tooting, S.W.

1869 CARTER, ROBERT BRUDENELL, Ophthalmic Surgeon to, and Lecturer on Ophthalmology at, St. George's Hospital; Surgeon to the Royal South London Ophthalmic Hospital; 27, Queen Anne Street, Cavendish Square, W. (C. 1873–6, V.P. 1879–81.) *Trans.* 8.

1885 CATON, RICHARD, M.D., 18, Croxteth Road, and 86, Rodney Street, Liverpool. *Trans.* 1.

Elected

1868 Cavafy, John, M.D., Physician to St. George's Hospital; 2, Upper Berkeley Street, Portman Square, W. (C. 1881–83.) *Trans.* 4.

Orig. Memb. Cayley, William, M.D., Physician to, and Lecturer on the Principles and Practice of Medicine at, the Middlesex Hospital; Physician to the London Fever Hospital, and to the North-Eastern Hospital for Children; 27, Wimpole Street, W. (C. 1874–5, S. 1876–8, C. 1879–80, V.P. 1885–86.) *Trans.* 7, *C.S.* 1.

1885 Chalmers, John, M.D., 29, Keppel Street, Russell Square, W.C.

1884 Chapman, Paul M., M.D., Physician to the Hereford General Infirmary, 1, St. John Street, Hereford.

1885 Cheyne, W. Watson, M.B., C.M., Assistant Surgeon and Demonstrator of Surgery to King's College Hospital; 59, Welbeck Street, Cavendish Square, W.

1873 Chisholm, Edwin, M.D., Abergeldie, Ashfield, near Sydney, New South Wales.

1868 Cholmeley, William, M.D., Physician to the Great Northern Hospital; 63, Grosvenor Street, W. (C. 1871–3.) *Trans.* 2.

Orig. Memb. Church, William Selby, M.D., Physician to, and Lecturer on Clinical Medicine at, St. Bartholomew's Hospital; 130, Harley Street, Cavendish Square, W. (C. 1874–6.)

1873 Churton, Thomas, M.D., Physician to the Leeds Infirmary, and Lecturer on Medicine in the Yorkshire College; 35, Park Square, Leeds. *Trans.* 2.

1882 Clapham, Edward, M.D., 29, Lingfield Road, Wimbledon.

Orig. Memb. Clapton, Edward, M.D., 10A, St. Thomas's Street, Southwark, S.E. (C. 1872–4.) *Trans.* 1.

Orig. Memb. Clark, Sir Andrew, Bart., M.D., LL.D., F.R.S., Physician to, and Emeritus Professor of Clinical Medicine at, the London Hospital; 16, Cavendish Square, W. (C. 1876–8, V.P. 1880–82, P. 1883–84.) *Trans.* 2.

1874 Clark, Andrew, Assistant Surgeon to, and Lecturer on Practical Surgery at, the Middlesex Hospital; 19, Cavendish Place, Cavendish Square, W.

1887 Clark, Francis William, Darenth Imbecile Schools, near Dartford, Kent.

Elected

1885 †Clarke, J. Michell, M.B., Assistant Physician to the Bristol General Hospital; 2, York Buildings, Clifton, Bristol.

1885 Clarke, William Bruce, M.B., Assistant Surgeon to, and Demonstrator of Anatomy at, St. Bartholomew's Hospital; 46, Harley Street, Cavendish Square, W.

1877 †Clay, Robert Hogarth, M.D., 4, Windsor Villas, Plymouth.

1887 Clemow, Arthur Henry Weiss, M.D., C.M., 69, Earls Court Square.

1877 *Clutton, Henry Hugh, M.A., Assistant Surgeon to St. Thomas's Hospital; 2, Portland Place, W. (C. 1885–87.) *Trans.* 8, *C.S.* 1.

1878 Collie, Alexander, M.D., Fever Hospital (Metropolitan Asylum District), The Grove, Homerton, E.

1882 Collier, Herbert, M.D., Marine Villa, Gorleston, Great Yarmouth, Norfolk.

1878 Collins, W. Maunsell, M.D., M.C., 10, Cadogan Place, S.W.

1882 Colquhoun, Daniel, M.D., Dunedin, New Zealand.

1872 Cooke, Thomas, Assistant Surgeon to the Westminster Hospital; 40, Brunswick Square, W.C.

1868 Cooper, Frank W., Leytonstone, Essex.

1887 Cotes, Charles E. H., M.B., 42, Davies Street, Berkeley Square, W.

1880 Cottle, Wyndham, M.D., Senior Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars; 3, Savile Row, W.

Orig. Memb. Couper, John, Surgeon to the London Hospital and to the Royal London Ophthalmic Hospital; 80, Grosvenor Street, W. (C. 1874.)

1875 Coupland, Sidney, M.D. (C.), Physician to, and Lecturer on Practical Medicine at, the Middlesex Hospital; 14, Weymouth Street, Portland Place, W. (S. 1882–4, C. 1885–87.) *Trans.* 4, *C.S.* 2.

1886 Cousins, John Ward, M.D., Riversdale, Kent Road, Southsea. *Trans.* 1.

1882 Coxwell, C. F., M.B., [abroad]. *Trans.* 2.

1879 Cripps, William Harrison (C.), Assistant Surgeon to St. Bartholomew's Hospital; 2, Stratford Place, Oxford Street, W. (C. 1886–8.) *Trans.* 3.

Elected

1872 Critchett, Anderson, Ophthalmic Surgeon to St. Mary's Hospital and to the Royal Free Hospital; 21, Harley Street, W.

1877 Crocker, Henry Radcliffe, M.D. Physician to the Skin Department, University College Hospital; and Physician to the East London Hospital for Children; 121, Harley Street, Cavendish Square, W. (C. 1884–5.) *Trans.* 14.

Orig. Memb. Croft, John, Surgeon to St. Thomas's Hospital; 48, Brook Street, Grosvenor Square, W. (C. 1870–2, V.P. 1882–4.) *Trans.* 12.

1872 Dalby, Sir William Bartlett, M.B., Aural Surgeon to St. George's Hospital; 18, Savile Row, W. (C. 1879–81.) *Trans.* 4.

1882 Dallaway, J. W. Dennis, 5, Duchess Street, Portland Place, W.

1886 Davies, Arthur T., M.B., 23, Finsbury Square, E.C. *C.S.* 3.

1879 Davies-Colley, J. Neville C., M.B., M.C., Surgeon to Guy's Hospital; 36, Harley Street, Cavendish Square, W. (C. 1885–86.) *Trans.* 6.

1879 †Davy, Henry, M.D., 34, Southernhay, Exeter.

1868 Day, William Henry, M.D., Physician to the Samaritan Free Hospital for Women and Children; 10, Manchester Square, W. *Trans.* 5.

1879 †Dennis, Frederic S., M.D., 21, East 21st Street, New York, U.S.

1875 Dent, Clinton T., Assistant Surgeon to, and Lecturer on Practical Surgery at, St. George's Hospital; 61, Brook Street, W. (C. 1884–6.) *Trans.* 2.

Orig. Memb. Dickinson, William Howship, M.D. (V.P.), Physician to, and Lecturer on Medicine at, St. George's Hospital; Consulting Physician to the Hospital for Sick Children; Honorary Fellow of Caius College, Cambridge; 9, Chesterfield Street, Mayfair, W. (C. 1874–5, V.P. 1888.) *Trans.* 1.

1871 Diver, Ebenezer, M.D., Kenley, Caterham Valley, Surrey.

Orig. Memb. Down, John Langdon H., M.D., Physician to, and Lecturer on Clinical Medicine at, the London Hospital; 81, Harley Street, W. (C. 1870–2.) *Trans.* 1.

Elected

1874 Dowse, Thomas Stretch, M.D., 14, Welbeck Street, Cavendish Square, W. *Trans.* 5.

1868 Drage, Charles, M.D., Hatfield, Herts.

1879 Drewitt, F. G. Dawtrey, M.D. (C.), Physician to the West London Hospital, and to the Victoria Hospital for Children; 52, Brook Street, Grosvenor Square, W. (C. 1886–8.) *Trans.* 2.

Orig. Memb. Duckworth, Sir Dyce, M.D. (V.P.), Physician to, and Lecturer on Clinical Medicine at, St. Bartholomew's Hospital; 11, Grafton Street, Bond Street, W. (C. 1875–7, V.P. 1887–8.) *Trans.* 16, *C.S.* 3.

Orig. Memb. Duffin, Alfred B., M.D., Physician to King's College Hospital, and Professor of Pathological Anatomy in King's College, London; 18, Devonshire Street, Portland Place, W. (C. 1872–4.) *Trans.* 6.

1884 Duke, Edgar, Locksley, Freshwater, Isle of Wight.

1869 Duke, Olliver Thomas, M.B., Surgeon, Bengal Army, India.

Orig. Memb. Durham, Arthur Edward, Surgeon to, and Lecturer on Surgery at, Guy's Hospital; 82, Brook Street, W. (C. 1867–9, V.P. 1884–5.) *Trans.* 5.

Orig. Memb. Edis, Arthur W., M.D., Obstetric Physician to, and Lecturer on Midwifery at, the Middlesex Hospital; 22, Wimpole Street, Cavendish Square, W. (C. 1884–6.) *Trans.* 1.

1884 Edmunds, Walter, M.C., 75, Lambeth Palace Road, S.E.

1882 Emond, Emile, M.D., Mont Dore, Auvergne, and 113, Boulevard Beaumarchais, Paris.

Orig. Memb. Erichsen, John E., LL.D., F.R.S., Surgeon Extraordinary to H.M. the Queen; Emeritus Professor of Surgery at University College, and Consulting Surgeon to University College Hospital; 6, Cavendish Place, Cavendish Square, W. (V.P. 1869–71.)

1868 Evans, Julian, M.B., Physician to the Victoria Hospital for Children; 123, Finborough Road, Redclyffe Square, S.W.

1888 *Eve, Frederic S., 15, Finsbury Circus, E.C.

1877 Ewart, William, M.D., Physician to St. George's Hospital; 33, Curzon Street, Mayfair, W. (C. 1884–6.)

ELECTED

1868 †FAIRBANK, FREDERICK ROYSTON, M.D., 46, Hall Gate, Doncaster. *Trans.* 1.

1885 FENN, EDWARD LIVEING, M.D., 1, Portland Terrace, Richmond Green, Surrey.

1887 FENWICK, E. HURRY, 5, Old Burlington Street, W.

1872 FENWICK, J. C. J., M.D., 25, North Road, Durham.

1878 FIELD, GEORGE P., Aural Surgeon to St. Mary's Hospital; 34, Wimpole Street, Cavendish Square, W.

1876 FINLAY, DAVID WHITE, M.D., Physician to, and Lecturer on Forensic Medicine at, the Middlesex Hospital, and Physician to the Royal Hospital for Diseases of the Chest; 9, Lower Berkeley Street, Portman Square, W. (C. 1885–87.) *Trans.* 4.

1868 FISH, JOHN CROCKETT, M.D., 92, Wimpole Street, Cavendish Square, W. (C. 1869–70.)

1885 FITZ-PATRICK, THOMAS, M.D., 30, Sussex Gardens, Hyde Park, W.

1878 •FONMARTIN, HENRY DE, M.D., Parkhurst, Isle of Wight.

1881 FOWLER, JAMES KINGSTON, M.D. (C.), Assistant Physician to, and Lecturer on Pathological Anatomy at, the Middlesex Hospital, and Assistant Physician to the Hospital for Consumption, Brompton; 35, Clarges Street, Piccadilly, W. (C. 1887–8.) *Trans.* 4, *C.S.* 3.

1886 FOX, R. HINGSTON, M.D., 43, Finsbury Circus, E.C.

1878 FOX, THOMAS COLCOTT, M.B. (C.), Physician to the Skin Department, Westminster Hospital, and to the Paddington Green Hospital, and Assistant Physician to the Victoria Hospital for Children; 14, Harley Street, Cavendish Square, W. (C. 1888.) *Trans.* 5, *C.S.* 1.

1887 FREEMAN, HENRY WILLIAM, 24, Circus, Bath.

1888 GAGE-BROWN, CHARLES HERBERT, M.D., 88, Sloane Street, S.W.

1868 GANT, FREDERICK JAMES, Senior Surgeon to the Royal Free Hospital; 16, Connaught Square, W. (C. 1877–9.) *Trans.* 3.

1887 GARROD, ARCHIBALD EDWARD, M.A., M.D., Casualty Physician to St. Bartholomew's Hospital and Physician to the Marylebone Dispensary; 9, Chandos Street, Cavendish Square, W.

Elected

1879 Garstang, Thomas Walter Harropp, The Heath, Knutsford, Cheshire.

1885 Gibbons, Robert Alexander, M.D., Physician to the Grosvenor Hospital for Women and Children; 29, Cadogan Place, S.W. *Trans.* 1.

1868 Glover, James Grey, M.D., Hon. Surgeon to the Holloway and North Islington Dispensary; 25, Highbury Place, N. (C. 1878–80.) *Trans.* 2.

1882 Goddard, Eugene, M.D., 106, Highbury New Park, N.

1875 Godlee, Rickman John, M.S. (C.), Surgeon to University College Hospital; Teacher of Operative Surgery, University College, London; Surgeon to the Hospital for Consumption, Brompton; 81, Wimpole Street, Cavendish Square, W. (C. 1882–3, 1887–8, S. 1884–6.) *Trans.* 11, *C.S.* 4.

1882 Goldie, Robert William, Medical Superintendent, Poplar and Stepney Sick Asylum; Devons Road, Bromley.

1878 Golding-Bird, C. H., M.B. (C.), Assistant Surgeon to, and Lecturer on Physiology at, Guy's Hospital; 13, St. Thomas's Street, Southwark, S.E. (C. 1887–8.) *Trans.* 10.

1875 Goodhart, James Frederic, M.D., Physician to, and Curator of the Museum at, Guy's Hospital; 25, Weymouth Street, Portland Place, W. (C. 1880–2.) *Trans.* 11, *C.S.* 2.

1869 Goodridge, Henry Frederick Augustus, M.D., Physician to the Bath Royal United Hospital; 10, Brock Street, Bath.

1882 Goodsall, D. H., 17, Devonshire Place, Upper Wimpole Street, W.

1881 Gordon, Hugh Alex., M.D., 45, Finsbury Square, E.C.

1877 Gould, A. Pearce, M.S., Assistant Surgeon to the Middlesex Hospital; 16, Queen Anne Street, Cavendish Square, W. (C. 1885–87.) *Trans.* 9, *C.S.* 2.

1875 Gowers, William Richard, M.D., F.R.S., Physician to University College Hospital; 50, Queen Anne Street, Cavendish Square, W. (C. 1881–2.) *Trans.* 4.

ELECTED

1868 GREEN, T. HENRY, M.D., Physician to the Charing Cross Hospital; Assistant Physician to the Hospital for Consumption, Brompton; 74, Wimpole Street, W. (C. 1877–9.) *Trans.* 2, *C.S.* 1.

1875 †GREENFIELD, WILLIAM SMITH, M.D., Professor of General Pathology in the University of Edinburgh; 7, Heriot Row, Edinburgh. (C. 1881) *Trans.* 3.

Orig. Memb. GREENHOW, EDWARD HEADLAM, M.D., F.R.S., Consulting Physician to the Middlesex Hospital; Castle Lodge, Reigate, (T. 1867–78, P. 1879–80.) *Trans.* 24.

1883 GROSS, CHARLES, Medical Superintendent, St. Saviour's Infirmary, Westmoreland Road, Walworth, S.E.

1868 †GUENEAU DE MUSSY, HENRI, M.D., 15, Rue du Cirque, Paris.

Orig. Memb. GULL, Sir WILLIAM WITHEY, Bart., M.D., D.C.L., F.R.S., Physician in Ordinary to the Queen, and Physician in Ordinary to H.R.H. the Prince of Wales; Consulting Physician, Guy's Hospital; 74, Brook Street, W. (V.P. 1868–70, P. 1871–2.) *Trans.* 6.

1887 HABERSHON, SAMUEL HERBERT, M.D., Casualty Physician to St. Bartholomew's Hospital; 2, Upper Wimpole Street, Cavendish Square, W.

Orig. Memb. HABERSHON, SAMUEL OSBORNE, M.D., 70, Brook Street, W. (C. 1873, V.P. 1878–9.) *Trans.* 6.

1882 HADDEN, WALTER BAUGH, M.D. (C.), Assistant Physician to St Thomas's Hospital, and to the Hospital for Sick Children; 21, Welbeck Street, Cavendish Square, W. (C. 1886–8.) *Trans.* 8, *C.S.* 1.

1875 HALE, C. D. B., 8, Sussex Gardens, Hyde Park, W.

1878 HALL, F. DE HAVILLAND, M.D., Assistant Physician to the Westminster Hospital; 47, Wimpole Street, Cavendish Square, W. (C. 1885–87.) *Trans.* 7, *C.S.* 1.

1883 HALLIBURTON, WILLIAM DOBINSON, M.D., Assistant Professor of Physiology, University College, London; 25, Maitland Park Villas, Haverstock Hill, N.W.

ELECTED

1888 HANDFIELD JONES, MONTAGU, M.D., 24, Montagu Square, W.

1886 †HANDFORD, HENRY, M.D., Physician to the Nottingham General Hospital; 14, Regent Street, Nottingham. *Trans.* 2.

1886 HARDIE, JAMES, M.D., 15, St. John Street, Manchester.

Orig. Memb. HARLEY, JOHN, M.D., F.L.S., Physician to, and Lecturer on General Anatomy and Physiology at, St. Thomas's Hospital; 9, Stratford Place, Oxford Street, W. (C. 1875.) *Trans.* 1.

1872 HARRIS, HENRY, M.D., Trengweath, Redruth, Cornwall.

1881 HARRISON, CHARLES EDWARD, M.B., Grenadier Guards Hospital, Rochester Row, S.W.

Orig. Memb. HART, ERNEST, 38, Wimpole Street, Cavendish Square, W. (C. 1867–8.)

1869 HAWARD, J. WARRINGTON (V.P.), Surgeon to St. George's Hospital; 16, Savile Row, Burlington Gardens, W. (C. 1876–8, 1884–6, S. 1881–3, V.P. 1888.) *Trans.* 12.

1886 HAWKINS, FRANCIS HENRY, M.B., Physician to St. George's and St. James's Dispensary, and to the North London Hospital for Consumption; 22, Henrietta Street, Cavendish Square, W.

Orig. Memb. HEATH, CHRISTOPHER (*Treasurer*), Surgeon to University College Hospital, and Holme Professor of Clinical Surgery in University College; 36, Cavendish Square, W. (C. 1867–71, V.P. 1876–8, T. 1879–87.) *Trans.* 18.

1879 HENDERSON, GEORGE COURTENAY, M.D., Kingston, Jamaica, West Indies.

1882 HERON, GEORGE ALLAN, M.D., Assistant Physician to the City of London Hospital for Diseases of the Chest, Victoria Park; 57, Harley Street, Cavendish Square, W.

1884 HERRINGHAM, WILMOT PARKER, M.D., 22, Bedford Square, W.C. *Trans.* 1. *C.S.* 1.

Orig. Memb. HEWETT, SIR PRESCOTT GARDNER, Bart., F.R.S., Surgeon-Extraordinary to H.M. the Queen; Consulting Surgeon to St. George's Hospital; Chesnut Lodge, Horsham, Sussex. (V.P. 1869–71, P. 1873–4.) *Trans.* 3.

ELECTED

Orig. Memb. HEWITT, GRAILY, M.D., Emeritus Professor of Midwifery in University College, and Consulting Obstetric Physician to University College Hospital; 36, Berkeley Square, W. (C. 1878–9.) *Trans.* 1.

Orig. Memb. HICKS, J. BRAXTON, M.D., F.R.S., F.L.S., Consulting Physician Accoucheur to Guy's Hospital, and Physician-Accoucheur to St. Mary's Hospital; 24, George Street, Hanover Square, W. (C. 1875–7.)

1868 HILL, BERKELEY, M.B., Professor of Clinical Surgery in University College, London, Surgeon to University College Hospital, and Surgeon to the Lock Hospital; 66, Wimpole Street, W. (C. 1870–1.) *Trans.* 7, *C.S.* 1.

1874 HOLDERNESS, WILLIAM BROWN, 15, Park Street, Windsor.

1868 †HOLMAN, CONSTANTINE, M.D., Reigate, Surrey.

1868 HOLMAN, WILLIAM HENRY, M.B., 68, Adelaide Road, South Hampstead, N.W.

Orig. Memb. HOLMES, TIMOTHY, late Senior Surgeon to St. George's Hospital; 18, Great Cumberland Place, Hyde Park, W. (C. 1867–9, V.P. 1873–5.) *Trans.* 16.

Orig. Memb. HOLT, BARNARD WIGHT, Consulting Surgeon to, and Lecturer on Clinical Surgery at, the Westminster Hospital; Medical Officer of Health for Westminster; 14, Savile Row, W. *Trans.* 1.

Orig. Memb. HOLTHOUSE, CARSTEN. (C. 1870–2.) *Trans.* 8.

1878 HOOD, DONALD WILLIAM CHARLES, M.D., Senior Physician, North-West London Hospital; Physician to the West London Hospital; 43, Green Street, Park Lane, W. *Trans.* 1.

1873 HOPE, WILLIAM, M.D., Senior Physician to Queen Charlotte's Lying-in Hospital; 56, Curzon Street, Mayfair, W.

1883 HOPKINS, JOHN, Medical Superintendent, Central London Sick Asylum; Cleveland Street, W. *C.S.* 1.

1884 HORSLEY, VICTOR, M.B., F.R.S., Assistant Surgeon, University College Hospital; Surgeon to the National Hospital for the Paralysed and Epileptic; Professor of Pathological Anatomy, University College, London; Superintendent of the Brown Institution, Wandsworth Road; 80, Park Street, Grosvenor Square, W. *Trans.* 1, *C.S.* 1.

ELECTED

1880 •HOVELL, T. MARK, Junior Aural Surgeon to the London Hospital; Surgeon to the Hospital for Diseases of the Throat; 8, Mansfield Street, Portland Place, W.

1876 HOWSE, HENRY GREENWAY, M.S. Surgeon to, and Lecturer on Anatomy at, Guy's Hospital; Surgeon to the Evelina Hospital for Sick Children; 59, Brook Street, Grosvenor Square, W. (C. 1881–3.) *Trans.* 3.

Orig. Memb. HULKE, JOHN WHITAKER, F.R.S., Surgeon to the Middlesex Hospital, and Surgeon to the Royal London Ophthalmic Hospital; 10, Old Burlington Street, W. (C. 1867–9, V.P. 1878–80.) *Trans.* 13.

Orig. Memb. HUMPHRY, GEORGE MURRAY, M.D., F.R.S., Professor of Surgery in the University of Cambridge, and Surgeon to Addenbrooke's Hospital, Cambridge. (V.P. 1867–70.)

Orig. Memb. HUTCHINSON, JONATHAN, F.R.S., Consulting Surgeon to the London Hospital; Surgeon to the Hospital for Diseases of the Skin, Blackfriars, and Surgeon to the Royal London Ophthalmic Hospital; 15, Cavendish Square, W. (C. 1867–8, V.P. 1875–6.) *Trans.* 11, *C.S.* 1.

1879 INKSON, JAMES, M.D., Brigade Surgeon, Army.

1883 JACKSON, GEORGE HENRY, Lansdowne House, Tottenham.

Orig. Memb. JACKSON, J. HUGHLINGS, M.D., F.R.S. (V.P.), Physician to the London Hospital; Physician to the National Hospital for the Paralysed and Epileptic; 3, Manchester Square, W. (C. 1872–3, V.P. 1887.) *Trans.* 2.

1877 JACOBSON, WALTER HAMILTON ACLAND, M.B., M.S., Assistant Surgeon to Guy's Hospital; 41, Finsbury Square, E.C.

1888 JAMISON, ARTHUR, M.D., C.M., 26, Lowndes Street, S.W.

1888 JAMES, J. F., M.B., 30, Harley Street, W.

Orig. Memb. JENNER, Sir WILLIAM, Bart., M.D., K.C.B., D.C.L., LL.D., F.R.S., Physician-in-Ordinary to H.M. the Queen and to H.R.H. the Prince of Wales; Consulting Physician to University College Hospital; 63, Brook Street, W. (V.P. 1867–70, P. 1875–6.) *Trans.* 2.

Elected

1875 Jessett, Frederick Bowreman, Surgeon to the Royal General Dispensary; 16, Upper Wimpole Street, W.

Orig. Memb. Johnson, George, M.D., F.R.S., Consulting Physician to King's College Hospital; 11, Savile Row, W. (V.P. 1874–6.) *Trans.* 5.

1878 Johnston, William, M.D., M.C., 16, Lonsdale Terrace, Upper Kent Street, Leicester.

1887 Jones, Edward Ager, 413, Kingsland Road, E.

Orig. Memb. Jones, Sydney, M.B., Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital; 16, George Street, Hanover Square, W. (C. 1867–8, V.P. 1886–7.) *Trans.* 2.

1872 Jones, Thomas Ridge, M D., Physician to the Victoria Hospital for Children; 4, Chesham Place, Belgrave Square, S.W.

1876 Jordan, Furneaux, Consulting Surgeon to the Queen's Hospital, Birmingham; Selly Hill, Birmingham. *Trans.* 1.

1886 Juler, Henry Edward, Assistant Surgeon to the Royal Westminster Ophthalmic Hospital; Junior Ophthalmic Surgeon to St. Mary's Hospital; 77, Wimpole Street, Cavendish Square, W.

1878 Keetley, Charles Robert Bell, Senior Surgeon to the West London Hospital; Surgeon to the Surgical Aid Society; 10, George Street, Hanover Square, W. *Trans.* 2.

Orig. Memb. Kelly, Charles, M.D., Medical Officer of Health for the West Sussex District; Worthing, Sussex.

1882 Kesteven, William Henry, 401, Holloway Road, N. *Trans.* 1.

1883 Kidd, Percy, M.D., Assistant Physician to the Hospital for Consumption, Brompton; 60, Brook Street, Grosvenor Square, W. *Trans.* 3, *C.S.* 1.

1887 †Knaggs, R. Lawford, B.C., Huddersfield. *Trans.* 1.

1878 Lacey, Thomas Warner, 196, Burrage Road, Plumstead, S.E.

1873 Lacy, C. de Lacy, M.B.

1883 Lane, William Arbuthnot, M.B., M.S., Assistant Surgeon to Guy's Hospital, and to the Hospital for Sick Children; 14, St. Thomas's Street, Southwark. *Trans.* 2, *C.S.* 2.

ELECTED

Orig. Memb. LANGTON, JOHN, Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital, and Surgeon to the City of London Truss Society; 62, Harley Street, W. (C. 1878–80.) *Trans.* 2.

1886 LANKESTER, HERBERT HENRY, M.D., 1, Elm Park Gardens, South Kensington, S.W.

1885 LARDER, HERBERT, Medical Superintendent, Whitechapel Infirmary, E. *C.S.* 1.

Orig. Memb. LAWSON, GEORGE, Surgeon Oculist to H.M. the Queen; Surgeon to the Middlesex Hospital, and to the Royal London Ophthalmic Hospital; 12, Harley Street, W. (S. 1871–3, C. 1874–6, V.P. 1881–3.) *Trans.* 16.

1877 †LEDIARD, HENRY AMBROSE, M.D., Surgeon to the Cumberland Infirmary; 41, Lowther Street, Carlisle. *Trans.* 5.

Orig. Memb. LEE, HENRY, Consulting Surgeon to St. George's Hospital; 9, Savile Row, W. (V.P. 1870–2.) *Trans.* 7.

1877 LEES, DAVID B., M.D., Physician to, and Lecturer on Materia Medica at, St. Mary's Hospital, and Assistant Physician to the Hospital for Sick Children; 22, Weymouth Street, Portland Place, W. (C. 1885.) *Trans.* 2.

1879 LICHTENBERG, GEORGE, M.D., 47, Finsbury Square, E.C.

1878 LISTER, Sir JOSEPH, Bart., D.C.L., L.L.D, F.R.S., Professor of Clinical Surgery at King's College, and Surgeon to King's College Hospital; 12, Park Crescent, Regent's Park, W. (P. 1881–2.) *Trans.* 3.

1868 LITTLE, LOUIS STROMEYER, China.

1875 LIVEING, EDWARD, M.D., 52, Queen Anne Street, Cavendish Square, W.

1872 LIVEING, ROBERT, M.D., Lecturer on Dermatology, and Physician to the Skin Department at the Middlesex Hospital; 11, Manchester Square, W. (C. 1883–4.) *Trans.* 2.

1885 LOCKWOOD, CHARLES BARRETT, Surgeon to the Great Northern Central Hospital, and Demonstrator of Anatomy at St. Bartholomew's Hospital; 19, Upper Berkeley Street, Portman Square, W.

1876 LONGHURST, ARTHUR EDWIN TEMPLE, M.D., 22, Wilton Street, Grosvenor Place, S.W. *Trans.* 1.

Elected

1881 Lubbock, Montagu, M.D., Assistant Physician to Charing Cross Hospital; 19, Grosvenor Street, W.

1876 Lucas, R. Clement, M.B., B.S., Surgeon to, and Demonstrator of Operative and Practical Surgery at, Guy's Hospital; 18, Finsbury Square, E.C. (C. 1883-5.) *Trans.* 9.

1879 Lunn, John Reuben, Resident Medical Officer, New Marylebone Infirmary, Rackham Street; Ladbroke Grove Road, Notting Hill, W. *Trans.* 5, *C.S.* 7.

1871 Mac Cormac, Sir William (V.P.), Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital; 13, Harley Street, W. (C. 1877-9, V.P. 1888.) *Trans.* 5.

1883 †Macfarlane, Alexander William, M.D., 6, Manchester Square.

1884 McGill, Arthur Fergusson, Professor of Anatomy, Yorkshire College; Surgeon to the Leeds General Infirmary; 23, Park Square, Leeds. *Trans.* 1.

1881 McHardy, Malcolm Macdonald, Ophthalmic Surgeon to King's College Hospital, and Professor of Ophthalmic Surgery in King's College, London; 5, Savile Row, W. *Trans.* 1.

1882 Mackenzie, Frederic Morell; 29, Hans Place, S.W.

Orig. Memb. Mackenzie, Sir Morell, M.D., Physician to the Hospital for Diseases of the Throat; 19, Harley Street, Cavendish Square, W. *Trans.* 4.

1879 Mackenzie, Stephen, M.D., Physician to, and Lecturer on Medicine at, the London Hospital; 26, Finsbury Square, E.C. (C. 1884, 1888, S. 1885-87.) *Trans.* 7, *C.S.* 9.

1884 Mackern, John, M.B., Assistant Physician, Chelsea Hospital for Women; 30, Cambridge Street, Hyde Park, W.

1879 Maclagan, Thomas John, M.D., 9, Cadogan Place, Belgrave Square, S.W. *Trans.* 1.

1885 Maclaren, Roderick, M.D, Portland Square, Carlisle. *Trans.* 1.

1875 Macnamara, Charles, Surgeon to the Westminster Hospital, and to the Royal Westminster Ophthalmic Hospital; 13, Grosvenor Street, W. (C. 1879-81.) *C.S.* 1.

ELECTED

1879 MAGILL, JAMES, M.D., M.C., Surgeon, Coldstream Guards; Coldstream Guards Hospital, Vincent Square, Westminster, S.W.

1885 MAGUIRE, ROBERT, M.D., Lecturer on Pathology at, and Assistant Physician to, St. Mary's Hospital; 4, Seymour Street, Portman Square, W. *Trans.* 1.

1881 MAKINS, GEORGE HENRY, Assistant Surgeon to St. Thomas's Hospital and to the Evelina Hospital for Children; 2, Queen Street, Mayfair, W. *C.S.* 3.

1887 MALCOLM, John D., M.B., C.M., 24, Bryanston Street, W.

1888 MARRIOTT, HYDE, M.B., 43, Charlotte Street, Portland Place, W.

1868 MARSH, F. HOWARD (V.P.), Assistant Surgeon and Lecturer on Anatomy to St. Bartholomew's Hospital, and Surgeon to the Hospital for Sick Children; 30, Bruton Street, Berkeley Square, W. (C. 1876–7, 1881–83, S. 1878–80, V.P. 1887–8.) *Trans.* 10, *C.S.* 3.

1875 MARSHALL, F. J., Resident Medical Officer, St. George's Hospital, W.

1888 MARTIN, HENRY ARTHUR, M.D., 55, Warwick Road, S.W.

1887 MARTIN, SIDNEY, M.D., B.S., 60, Gower Street, W.C.

1884 MAUDSLEY, HENRY CARR, M.D., 11, Spring Street, Melbourne, Victoria.

1868 †MAY, EDWARD HOOPER, M.D., High Cross, Tottenham, Middlesex, N.

1888 MAY, W. P., M.B., University College Hospital.

1888 MENZIES, J. H., 1, Gwendwr Road, West Kensington.

1878 MEREDITH, WILLIAM APPLETON, C.M. (C.), Surgeon to the Samaritan Free Hospital for Women and Children; 6, Queen Anne Street, Cavendish Square, W. (C. 1887–8.) *Trans.* 2.

1873 MICKLE, WILLIAM JULIUS, M.D., Lecturer on Mental Diseases, University College, London; Physician Superintendent, Grove Hall Asylum, Bow, E.

1877 MILNER, EDWARD, Surgeon to the Lock Hospital; 32, New Cavendish Street, Portland Place, W.

Elected

1882 Money, Angel, M.D. (C.), Assistant Physician to University College Hospital, to the City of London Hospital for Diseases of the Chest, Victoria Park, and to the Hospital for Sick Children, Great Ormond Street; 24, Harley Street, Cavendish Square, W. (C. 1888.) *Trans.* 3.

1874 Morgan, John Hammond, Assistant Surgeon to the Charing Cross Hospital, and to the Hospital for Sick Children; 68, Grosvenor Street, W. (C. 1883–5.) *Trans.* 2, *C.S.* 3.

1877 Morris, Henry, M.B., Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital; 2, Mansfield Street, Portland Place, W. (C. 1884–6.) *Trans.* 9.

1877 Morris, Malcolm Alex., Surgeon to the Skin Department of, and Lecturer on Dermatology at, St. Mary's Hospital; 8, Harley Street, Cavendish Square, W. *Trans.* 1.

1888 Morison, Alexander, M.D., 115, Green Lanes, Stoke Newington, N.

1885 Mott, Frederick Walker, M.D, C.M., Lecturer on Physiology, Charing Cross Hospital; Meadowlead, Gayton Road, Harrow.

1879 Moullin, Charles W. Mansell (C.), Assistant Surgeon to the London Hospital; 69, Wimpole Street, Cavendish Square, W. (C. 1888). *Trans.* 2.

1875 Murphy, Shirley F. (C.), Lecturer on Hygiene and Public Health, St. Mary's Hospital; 41, Queen Anne Street, Cavendish Square, W. (C. 1888.) *C.S.* 1.

1885 Murray, Alexander Dalton, M.B., Rickmansworth, Herts.

1883 Murray, Hubert Montague, M.D., Assistant Physician to, and Demonstrator of Pathology at, Charing Cross Hospital; 27, Savile Row, W. *Trans.* 1.

1868 Myers, Arthur Bowen Richards, Surgeon to 1st Battalion of the Coldstream Guards; 3, Park Terrace, Windsor. (C. 1877–9.) *Trans.* 1.

1882 Myers, A. T., M.D., Medical Registrar, St. George's Hospital; 9, Lower Berkeley Street, Portman Square, W. *Trans.* 1.

Elected

1872 Myrtle, Andrew S., M.D., 8, Park Parade, Harrogate.

1874 Nankivell, Arthur Wolcot, Resident Surgeon, St. Bartholomew's Hospital, Chatham.

1875 Nettleship, Edward, Ophthalmic Surgeon to, and Lecturer on Ophthalmology at, St. Thomas's Hospital; 5, Wimpole Street, Cavendish Square, W. (C. 1881–82.) *Trans.* 2.

Orig. Memb. Norton, Arthur Trehern, Surgeon to, and Lecturer on Surgery at, St. Mary's Hospital; 101, Harley Street, Cavendish Square, W. (C. 1874–6.) *Trans.* 6.

Orig. Memb. Nunn, Thomas William, Consulting Surgeon to the Middlesex Hospital; 8, Stratford Place, Oxford Street, W. (C. 1873–74.) *Trans.* 6.

1880 O'Connor, Bernard, M.D., Physician to the North London Hospital for Consumption; Greenhill Park, Harlesden, N.W. *Trans.* 1.

Orig. Memb. Ogle, John William, M.D., Consulting Physician to St. George's Hospital; 30, Cavendish Square, W. (C. 1867–8, V.P. 1884–5.) *Trans.* 6.

1868 †Ogle, William, M.D., Physician to the Derbyshire General Infirmary; 98, Friar Gate, Derby.

1883 Oliver, George, M.D., West End Park, Harrogate.

1887 Oliver, Thomas, M.D., 12, Eldon Square, Newcastle-on-Tyne.

1887 Openshaw, Thomas Horrocks, M.B., 21, Gower Street, W.C.

1868 Oppert, Franz, M.D.; 128, Leipzigerstrasse, Germany. *Trans.* 1.

1877 Ord, William Miller, M.D., Physician to, and Lecturer on Medicine at, St. Thomas's Hospital; 37, Upper Brook Street, Grosvenor Square, W. (C. 1882–4.) *Trans.* 6.

1887 Ormerod, Joseph Arderne, M.D., Assistant Physician to the National Hospital for the Paralysed and Epileptic, Queen Square, and to the City of London Hospital for Diseases of the Chest, Victoria Park; 25, Upper Wimpole Street, Cavendish Square, W.

Elected

1884 Ormsby, Lambert Hepenstal, M.D., Lecturer on Clinical and Operative Surgery at, and Surgeon to, the Meath Hospital and County Dublin Infirmary; Surgeon to the Children's Hospital, Dublin; 4, Merrion Square West, Dublin.

1883 Orton, George Hunt, M.B., 1, Campden Hill Road, Kensington, W.

1877 Owen, Isambard, M.D. (C.), Assistant Physician to, and Lecturer on Forensic Medicine at, St. George's Hospital; 5, Hertford Street, Mayfair, W. (C. 1888.) *Trans.* 1.

1888 Oxley, Alfred Rice, M.D., Streatham Common.

1888 Page, Frederick, M.D., 1, Saville Place, Newcastle-upon-Tyne.

1875 Page, Herbert W., M.C., M.B., Surgeon to, and Joint-Lecturer on Surgery at, St. Mary's Hospital; 146, Harley Street, W. (C. 1882–4.) *Trans.* 2.

1884 Paget, Stephen, 57, Wimpole Street, Cavendish Square, W. *Trans.* 2. *C.S.* 1.

1873 Parker, Robert William (*Hon. Secretary*), Surgeon to the East London Hospital for Children; 8, Old Cavendish Street, W. (C. 1882–4, S. 1887–8.) *Trans.* 8, *C.S.* 7.

1881 Parker, Rushton, M.B., Professor of Surgery in University College, Liverpool, and Assistant Surgeon Liverpool Royal Infirmary; 59, Rodney Street, Liverpool. *Trans.* 1, *C.S.* 1.

1881 Pasteur, William, M.D., Medical Registrar to the Middlesex Hospital; Physician to the North-Eastern Hospital for Children; 19, Queen Street, May Fair, W. *C.S.* 1.

1883 Paul, John Liston, M.D., 43, Queensborough Terrace, W.

Orig. Memb. Pavy, Frederick William, M.D., F.R.S., Physician to Guy's Hospital; 35, Grosvenor Street, W. (C. 1869–71, V.P. 1882–4.) *Trans.* 3.

1886 Payne, Joseph Frank, M.D., Physician to, and Lecturer on Pathological Anatomy at, St. Thomas's Hospital; 78, Wimpole Street, Cavendish Square, W.

1887 Pearce, Walter, M.D., 33, Westbourne Terrace, W.

Elected	
1887	Pearse, Thomas Frederick, M.D., 10, Montague Street, Russell Square, W.C.
1879	Peel, Robert, 130, Collins Street East, Melbourne, Victoria.
1886	†Penny, William John, 42, Caledonia Place, Clifton.
1887	Penrose, Francis George, M.D., Coleybyfield, Wimbledon.
1882	Pepper, Augustus Joseph, M.S., M.B., Surgeon to St. Mary's Hospital; 13, Wimpole Street, W. *Trans.* 1.
1874	Phillips, Charles Douglas F., M.D., 10, Henrietta Street, Cavendish Square, W.
1884	Phillips, Sidney Philip, M.D., Physician to St. Mary's Hospital; Assistant Physician to the London Fever Hospital; 21, Upper Berkeley Street, Portman Square, W. *Trans.* 2.
Orig. Memb.	Pick, Thomas Pickering, Surgeon to, and Lecturer on Surgery at, St. George's Hospital; 18, Portman Street, Portman Square, W. (S. 1874–7, C. 1878–80, V.P. 1885–86.) *Trans.* 4.
1885	Pitt, George Newton, M.D., Assistant Physician to, and Pathologist at, Guy's Hospital; 10, St. Thomas's Street, Southwark, S.E.
1883	Pitts, Bernard, M.A., M.C., Assistant Surgeon, St. Thomas's Hospital; 31, Harley Street, W. *Trans.* 4.
1871	†Playne, Alfred, M.B., Maidenhead.
1884	Poland, John, Demonstrator of Anatomy, Guy's Hospital; 16, St. Thomas's Street, Southwark, S.E.
1884	Pollard, Bilton, Assistant Surgeon and Surgical Registrar to University College Hospital; Surgeon to the North-Eastern Hospital for Children; 24, Harley Street, Cavendish Square, W. *Trans.* 1.
1868	Pollock, James Edward, M.D., Consulting Physician to the Hospital for Consumption and Diseases of the Chest; 52, Upper Brook Street, Grosvenor Square, W. (C. 1878–80.)
1871	Poore, George Vivian, M.D., Professor of Medical Jurisprudence in University College, and Physician to University College Hospital; 30, Wimpole Street, W. (C. 1879–81.) *Trans.* 3.
1873	Port, Heinrich, M.D., Physician to the German Hospital; 48, Finsbury Square, E.C.

Elected

1881 Powell, H. A., M.A., Elm Cottage, Beckenham, Kent.

Orig. Memb. Powell, R. Douglas, M.D., Physician-Extraordinary to H.M. the Queen; Physician to, and Lecturer on Practical Medicine at, the Middlesex Hospital; Physician to the Hospital for Consumption and Diseases of the Chest, Brompton; 62, Wimpole Street, Cavendish Square, W. (C 1874–76.) *Trans.* 4.

1868 Prentis, Charles, Surgeon-Major, Bengal Medical Service; India.

1884 Pringle, John James, M.B., Assistant Physician to, and Physician in charge Skin Department at, the Middlesex Hospital; and Physician to the Royal Hospital for Diseases of the Chest; 35, Bruton Street, Berkeley Square, W. *Trans.* 1, *O.S.* 1.

1884 Pye-Smith, Philip Henry, M.D., F.R.S., Physician to, and Lecturer on Medicine at, Guy's Hospital; Member of the Senate of the University of London; 54, Harley Street, Cavendish Square, W.

Orig. Memb. Quain, Richard, M.D., F.R.S., Consulting Physician to the Hospital for Consumption and Diseases of the Chest; Member of the Senate of the University of London; 67, Harley Street, W. (C. 1867–9.)

Orig. Memb. Ramskill, J. Spence, M.D., Consulting Physician to the London Hospital; Senior Physician to the National Hospital for the Paralysed and Epileptic; 5, St. Helen's Place, Bishopsgate Street, E.C.

1873 Ransford, Gifford, M.D., 27, Gloucester Place, Hyde Park, W. (C. 1884–5.)

1868 Rasch, Adolphus A., M.D., Physician for Diseases of Women to the German Hospital; 7, South Street, Finsbury Square, E.C.

1877 Rayner, Henry, M.D., Lecturer on Mental Diseases at St. Thomas's Hospital; Middlesex County Lunatic Asylum, Hanwell, W.

1883 Read, Thomas Laurence, 11, Petersham Terrace, Queen's Gate, S.W.

1874 Ree, Frederick G., Lifford Lodge, Outram Road, Addiscombe, Surrey.

1868 Reeves, Henry A., Assistant Surgeon to the London Hospital; 78, Grosvenor Street, W. *Trans.* 2.

Elected

Orig. Memb. Reynolds, John Russell, M.D., F.R.S., Consulting Physician to University College Hospital; 38, Grosvenor Street, W. (C. 1867–8.)

1868 Rice, Michael W., M.D. (C. 1876–8.)

1883 Ring, Edmund Cuthbert, 55, New Bond Street, W.

Orig. Memb. Ringer, Sydney, M.D., F.R.S., Holme Professor of Clinical Medicine in University College, London, and Physician to University College Hospital; 15, Cavendish Place, W. (C. 1871–2)

1877 Rivington, Walter, M.S. (C.), Surgeon to, and Lecturer on Surgery at, the London Hospital; 22, Finsbury Square, E.C. (C. 1886–8.) *Trans.* 3.

1873 †Roberts, David Lloyd, M.D., Physician to St. Mary's Hospital, Manchester; 11, St. John Street, Manchester.

1888 Roberts, Frank Ernest, Tulse Dale Villa, Lower Norwood, S.E.

1883 Roberts, Frederick Thomas, M.D., Professor of Materia Medica and Therapeutics in University College, London, and Physician to University College Hospital; Physician to the Hospital for Consumption, Brompton; 102, Harley Street, Cavendish Square, W.

1885 Robinson, Arthur Henry, M.D., Mile End Infirmary, Bancroft Road, E. *C.S.* 3.

1885 Robson, A. W. Mayo, Surgeon to the Leeds General Infirmary, Hillary Place, Leeds. *Trans.* 5.

1875 Rogers, William Richard, M.D., 56, Berners Street, Oxford Street, W.

1888 Roper, Arthur, Lewisham Hill, Blackheath.

1877 Roth, Bernard, 29, Queen Anne Street, W. *Trans.* 1, *C.S.* 4.

Orig. Memb. Rouse, James, Surgeon to St. George's Hospital, and to the Royal Ophthalmic Hospital, Charing Cross; 2, Wilton Street, Grosvenor Place, S.W. (C. 1875–7.) *Trans.* 2.

1874 Rowland, Edward R.

1887 Rutherfoord, H. T., M.B., 46, Queen Anne Street, Cavendish Square, W.

1885 Ryle, Reginald John, M.D., Green View, Hadley Green, Barnet.

ELECTED

1882 SAINSBURY, HARRINGTON, M.D., 63, Welbeck Street, W.

1868 SANDERSON, HUGH JAMES, M.D., 26, Upper Berkeley Street, W.

Orig. Memb. SANDERSON, JOHN BURDON, M.D., LL.D., F.R.S., Waynflete Professor of Physiology in the University of Oxford; 50, Banbury Road, Oxford. (S. 1867–9, C. 1870, V.P. 1871–3.) *Trans.* 3.

1873 SAVAGE, GEORGE HENRY, M.D., Medical Superintendent and Resident Physician to the Bethlem Royal Hospital, St. George's Road, S.E. (C. 1882–3.)

1886 SAVILL, THOMAS DIXON, M.D., Paddington Infirmary, Harrow Road, W. *C.S.* 2.

1885 SAWTELL, TOM HENRY, M.B., 14, Stapleton Hall Road, Stroud Green, N. *Trans.* 1.

1886 SCOTT, ALFRED, 15, German Place, Brighton.

1877 SEATON, EDWARD, M.D., 35, George Street, Hanover Square, W. *Trans.* 1.

1869 SEDGWICK, LEONARD WILLIAM, M.D., 2, Gloucester Terrace, Hyde Park, W. (C. 1879–81.)

1878 SEMON, FELIX, M.D., Assistant Physician for Diseases of the Throat to St. Thomas's Hospital; 39, Wimpole Street, Cavendish Square, W. (C. 1885–87.) *Trans.* 5.

1884 SHARKEY, SEYMOUR J., M.D., Assistant Physician and Lecturer on Pathology to St. Thomas's Hospital; 2, Portland Place, W.

1875 SHERWOOD, ARTHUR PAUL, 8, Seaside Road, Eastbourne.

Orig. Memb. SIBLEY, SEPTIMUS WILLIAM, 7, Harley Street, Cavendish Square, W. (C. 1871–4.)

1886 SILCOCK, ARTHUR QUARRY, M.D., M.S., Surgeon in charge of Out-Patients to St. Mary's Hospital, and Assistant Surgeon to the Royal London Ophthalmic Hospital; 101, Harley Street, Cavendish Square, W. *C.S.* 1.

1879 SKERRITT, EDWARD MARKHAM, M.D., Physician to the Bristol General Hospital, Lecturer on Medicine at the Bristol Medical School; Coburg Villa, Richmond Hill, Clifton, Bristol. *Trans.* 2.

Elected

1877 Skinner, William A., 45, Lower Belgrave Street, Eaton Square, S.W.

1872 Slight, George, M.D., 3, Clifford Street, Bond Street, W.

1882 Smith, E. Noble, Senior Surgeon, and Surgeon to the Orthopædic Department, of the Farringdon Dispensary; 24, Queen Anne Street, Cavendish Square, W. *Trans.* 1.

1888 Smith, Frederick J., M.B., 7, West Street, Finsbury Circus, E.C.

1868 Smith, Protheroe, M.D., Consulting Physician to the Hospital for Women; 42, Park Street, Grosvenor Square, W.

1884 Smith, R. Percy, M.D., Assistant Medical Officer, Bethlem Royal Hospital, S.E.

Orig. Memb. Smith, Thomas, Surgeon to, and Lecturer on Clinical Surgery at, St. Bartholomew's Hospital, and Surgeon to the Hospital for Sick Children; 5, Stratford Place, Oxford Street, W. (C. 1869–71, V.P. 1880–82.) *Trans.* 14.

1875 Smith, T. Gilbart, M.A., M.D., Assistant Physician to the London Hospital; Physician to the Royal Hospital for Diseases of the Chest, City Road; 68, Harley Street, Cavendish Square, W. (C. 1883–5.)

1873 Smith, William Johnson, Surgeon to the Seamen's Hospital, Greenwich, S.E.

1872 Smith, William Wilberforce, M.D., 14, Stratford Place, Oxford Street, W.

1883 Smith, Winckworth Tonge, M.D., 129, Ladbroke Grove, W.

1868 Snow, William V., M.D., Richmond Gardens, Bournemouth.

Orig. Memb. Southey, Reginald, M.D., Commissioner in Lunacy, 32, Grosvenor Road, Pimlico, W. (C. 1867–70, 1876–8, S. 1873–5, V.P. 1883–4.) *Trans.* 16.

1885 Spicer, Frederick, M.D., 14, Carleton Road, Tufnell Park.

1888 Spicer, Robert Henry Scanes, M.D., Physician to the Department for Diseases of the Throat, St. Mary's Hospital; 28, Welbeck Street, Cavendish Square, W.

1882 Spooner, Frederick Henry, M.D., Maitland Lodge, Maitland Place, Clapton, E.

ELECTED

1876 SQUIRE, A. BALMANNO, M.B., 24, Weymouth Street, Portland Place, W. *Trans.* 5.

1879 STAPLES, FRANCIS PATRICK, late Assistant Professor of Military Surgery, Netley; Army Medical Department, Aldershot.

1871 STEWART, WILLIAM EDWARD, 16, Harley Street, Cavendish Square, W.

1874 †STIRLING, EDWARD C., M.D., late Assistant Surgeon to, and Lecturer on Physiology at, St. George's Hospital; Adelaide, South Australia, [care of T. GEMMELL, Esq., 11, Essex Street, Strand. W.C.]

1888 STOKER, GEORGE, 14, Hertford Street, Mayfair, W.

1881 STOKES, HENRY FRASER, 2, Highbury Crescent, N.

1878 STOKES, Sir WILLIAM, M.D., Professor of Surgery, Royal College of Surgeons, Ireland; Surgeon to the Richmond Surgical Hospital; 5, Merrion Square North, Dublin. *Trans.* 2.

1884 STONHAM, CHARLES, Assistant Surgeon to the Westminster Hospital, and to the Cancer Hospital, Brompton; 62, Welbeck Street, Cavendish Square, W. *C.S.* 3.

1878 STRUGNELL, FREDERICK WILLIAM, 45, Highgate Road, Highgate, N. *C.S.* 1.

1878 †STURGE, WILLIAM ALLEN, M.D., late Assistant Physician to the Royal Free Hospital; 9, Rue Longchamp, Nice, Alpes Maritimes, France. *Trans.* 4.

1872 *SUTHERLAND, HENRY, M.D., Lecturer on Insanity, Westminster Hospital; 6, Richmond Terrace, Whitehall, S.W. *Trans.* 1.

Orig. Memb. SUTTON, HENRY GAWEN, M.B., Physician to, and Lecturer on Pathology at, the London Hospital; 9, Finsbury Square, E.C. (C. 1878.) *Trans.* 2.

1887 SUTTON, JOHN BLAND, Assistant Surgeon to the Middlesex Hospital; 22, Gordon Street, Gordon Square, W. *Trans.* 1.

1882 SYMONDS, CHARTERS JAMES, M.S. (C.), Assistant Surgeon to Guy's Hospital; 26, Weymouth Street, Portland Place, W. (C. 1888.) *Trans.* 9, *C.S.* 1.

1876 SYMONDS, HORATIO PERCY, Surgeon to the Radcliffe Infirmary, Oxford; 35, Beaumont Street, Oxford.

ELECTED

1885 TAIT, EDWARD SABINE, M.B., 54, Highbury Park, N.

1885 TAIT, HENRY BREWER, 28, Hornsey Rise, N.

1868 TATHAM, JOHN, M.D., Physician to the Hospital for Consumption and Diseases of the Chest; 12, George Street, Hanover Square, W.

1886 TAY, WAREN, Surgeon to the London Hospital and to the North-Eastern Hospital for Children, and the Hospital for Skin Diseases, Blackfriars; 4, Finsbury Square, E.C.

1878 TAYLER, FRANCIS THOMAS, M.B., 224, Lewisham High Road, S.E.

1875 TAYLOR, FREDERICK, M.D., Physician to, and Lecturer on Medicine at, Guy's Hospital; Physician to the Evelina Hospital for Sick Children; 11, St. Thomas's Street, Southwark, S.E. (S. 1879–81, C. 1882–4.) *Trans.* 9. *C.S.* 1.

1882 TAYLOR, SEYMOUR, M.D., Physician to the North London Hospital for Consumption; 16, Seymour Street, Portman Square, W. *Trans.* 1.

1885 †TAYLOR, W. C. EVERLEY, 34, Queen Street, Scarborough.

1886 TEALE, THOMAS PRIDGIN, M.B., F.R.S., 38, Cookridge Street, Leeds.

1882 THIN, GEORGE, M.D., 22, Queen Anne Street, Cavendish Square, W. *Trans.* 1.

1886 THOMPSON, CHARLES HERBERT, M.D., Metropolitan Free Hospital, Kingsland Road, E.

Orig. Memb. THOMPSON, EDMUND SYMES, M.D., Physician to the Hospital for Consumption and Diseases of the Chest; Gresham Professor of Medicine; 33, Cavendish Square, W. (C. 1880–82.) *Trans.* 1.

Orig. Memb. THOMPSON, Sir HENRY, Knt., Surgeon-Extraordinary to H.M. the King of the Belgians; Emeritus Professor of Clinical Surgery in University College; 35, Wimpole Street, W. (C. 1867–8, V.P. 1886–7.) *Trans.* 3.

1887 THORNTON, JOHN KNOWSLEY, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children; 22, Portman Street, Portman Square, W.

1872 THORNTON, WILLIAM PUGIN, 35, St. George's Road, Canterbury. *Trans.* 5.

1876 THRUPP, JAMES GODFREY, Fern House, Heston, Hounslow.

Elected

1885 Thursfield, Thomas William, M.D., 26, The Parade, Leamington.

1887 Totsuka, Kankai, 65, Lambeth Palace Road, S.E.

1874 Travers, William, M.D., 2, Phillimore Gardens, Kensington, W.

1884 Treves, Frederick, Surgeon to, and Lecturer on Anatomy at, the London Hospital; 6, Wimpole Street, Cavendish Square, W. *Trans.* 5.

1882 Turner, Francis Charlewood, M.D. (C.), Physician to the London Hospital, and to the North-Eastern Hospital for Children; 15, Finsbury Square, E.C. (C. 1887–8.) *Trans.* 1.

1882 Turner, George Robertson, Visiting Surgeon, Seamen's Hospital, Greenwich; Assistant Surgeon to, and Joint Lecturer on Practical Surgery, St. George's Hospital; 49, Green Street, Park Lane, W. *Trans.* 4.

1877 Tweedy, John, Professor of Ophthalmic Medicine and Surgery at University College, and Ophthalmic Surgeon to University College Hospital; Surgeon to the Royal London Ophthalmic Hospital; 100, Harley Street, Cavendish Square, W.

1878 Tyson, William Joseph, M.D. (C.), 10, Langhorne Gardens, Folkestone. (C. 1886–8.) *Trans.* 5.

1881 Uhthoff, John Caldwell, M.D., 46, Western Road, Hove, Brighton.

1868 Venning, Edgcombe, 30, Cadogan Place, S.W. (C. 1876–8.) *Trans.* 2.

1886 Wade, Charles H., Scotleigh, Chudleigh, Devon.

1868 Wagstaffe, William Warwick, Purleigh, St. John's Hill, Sevenoaks. (C. 1878.)

1886 *Wainewright, Benjamin, M.B., C.M., 6, Harley Street, Cavendish Square, W. *Trans.* 2, *C.S.* 1.

1885 Wakley, Thomas, Jun., 96, Redcliffe Gardens, S.W.

1885 Walker, Charles Rotherham, M.D., 7, Grove Road, Leytonstone, E.

1875 Walsham, William J., Assistant Surgeon to, and Demonstrator of Practical and Orthopædic Surgery at, St. Bartholomew's Hospital; Surgeon to the Metropolitan Free Hospital; 27, Weymouth Street, Portland Place, W. (C. 1882–4.) *Trans.* 5. *C.S.* 1.

Elected

1888 Walters, Frederick Rufenacht, M.D., 22, Finsbury Circus, E.C.

1888 †Warner, Percy, Woodford, Essex.

1876 Waters, John H., M.D., 101, Jermyn Street, St. James's, S.W.

1868 Watkins, Edwin T., M.D., 61, Guilford Street, W.C. (C. 1881–83.)

Orig. Memb. Watson, William Spencer, M.B., Surgeon to the Great Northern Hospital; Surgeon to the Royal South London Ophthalmic Hospital; 7, Henrietta Street, Cavendish Square, W. (C. 1880–82.) *Trans.* 10.

1879 de Watteville, Armand, M.A., M.D., B.Sc., Physician in Charge of the Electro-Therapeutical Department, St Mary's Hospital; 30, Welbeck Street, W.

Orig. Memb. Weber, Hermann, M.D., Physician to the German Hospital; 10, Grosvenor Street, W. (C. 1867–71, V.P. 1873–5.) *Trans.* 9.

1876 Weir, Archibald, M.D., St. Mungho's, Great Malvern.

1868 Wells, Sir Thomas Spencer, Bart., Surgeon in Ordinary to H.M.'s Household; Consulting Surgeon to the Samaritan Free Hospital; 3, Upper Grosvenor Street, W. (C. 1873.)

1885 West, Charles, M.D., Corresponding Member of the Academy of Medicine of Paris; 55, Harley Street, Cavendish Square, W.

1882 West, Samuel, M.D. (C.), Assistant Physician to St. Bartholomew's Hospital; Physician to the City of London Hospital for Diseases of the Chest, Victoria Park, and to the Royal Free Hospital; 15, Wimpole Street, Cavendish Square, W. (C. 1887–8.) *Trans.* 9, *C.S.* 1.

1874 Wheelhouse, Claudius Galen, Senior Surgeon to the Leeds General Infirmary, and Lecturer on Surgery, Leeds Medical School; Hilary Place, Leeds. *Trans.* 1.

1868 Whipham, Thomas Tillyer, M.B., Physician to, and Lecturer on Clinical Medicine at, St. George's Hospital; 11, Grosvenor Street, Grosvenor Square, W. (C. 1878–80.) *Trans.* 11.

ELECTED

1874 WHISTLER, W. MCNEILL, M.D., Physician to the London Throat Hospital; 28, Wimpole Street, Cavendish Square, W.

1882 WHITE, EDWIN FRANCIS, Anæsthetist to St. Thomas's Hospital; 7, Dealtry Road, Putney.

1883 WHITE, WILLIAM HALE, M.D. (C.), Senior Assistant Physician and Lecturer on Materia Medica to Guy's Hospital; 65, Harley Street, Cavendish Square, W. (C. 1887–8.) *Trans.* 6, *S.C.* 2.

1883 WHITE, WILLIAM HENRY, M.D., Assistant Physician to the Royal Hospital for Diseases of the Chest; 43, Weymouth Street, W. *C.S.* 1.

1882 WHITTLE, EDWARD GEORGE, M.D., 65, Dyke Road, Brighton.

1871 WIGHT, GEORGE, M.B., C.M.; 428, Liverpool Road, N.

1879 WILCOX, HENRY, M.B., Dorchester House, Herbert Road, Woolwich.

Orig. Memb. WILKS, SAMUEL, M.D., F.R.S., Member of the Senate of the University of London; Consulting Physician to Guy's Hospital; 72, Grosvenor Street, W. (C. 1871–2. V.P. 1886–7.) *Trans.* 1.

1884 WILLCOCKS, FREDERICK, M.D., Assistant Physician to the Charing Cross Hospital; Physician in charge of Out-patients at the Evelina Hospital for Children; 14, Mandeville Place, W. *C.S.* 1.

Orig. Memb. WILLETT, ALFRED, Surgeon to St. Bartholomew's Hospital; 36, Wimpole Street, W. (C. 1872–5.) *C S.* 1.

1888 WILLIAMS, CAMPBELL, 62, Welbeck Street. W.

Orig. Memb. WILLIAMS, CHARLES THEODORE, M.D., Physician to the Hospital for Consumption and Diseases of the Chest; 2, Upper Brook Street, Grosvenor Square, W. (C. 1877–9.) *Trans.* 8.

1881 WILLIAMS, JOHN, M.D., Professor of Midwifery, University College, London; Obstetric Physician to University College Hospital; 11, Queen Anne Street, Cavendish Square, W. (C. 1885–86.)

1870 WILLIAMS, WILLIAM RHYS, M.D., Commissioner in Lunacy; 13, Gloucester Street, Warwick Square, S.W.

Elected	
1876	Williamson, James Mann, M.D.; Ventnor, Isle of Wight.
Orig. Memb.	Willis, Francis, M.D., The Spa, Braceborough, Stamford.
1886	Wilson, Albert, M.D., Leytonstone, Essex.
1888	Wilson, Claude, M.D., C.M., 6, York Road, Tunbridge Wells.
1880	Wood, John, F.R.S., Professor of Clinical Surgery in King's College, London, and Senior Surgeon to King's College Hospital; 61, Wimpole Street, Cavendish Square, W. (C. 1886–7.)
1883	Woodcock, John Rostron, 263, Hagley Road, Birmingham.
1879	Woodward, George P. M., M.D., Deputy Surgeon-General; Sydney, New South Wales.
1884	Worts, Edwin, 6, Trinity Street, Colchester.
1872	Yeo, I. Burney, M.D., Physician to King's College Hospital; 44, Hertford Street, Mayfair, W. (C. 1881–3.) *Trans.* 6.

[*It is requested that any change of Title, Appointment, or Residence be communicated to the Secretaries before the* 1*st of July in each year in order that the list may be made as correct as possible.*]

LIST OF MEMBERS.

ORIGINAL MEMBERS (ALPHABETICALLY).

Sir Henry Acland, M.D., F.R.S.
James Andrew, M.D.
Henry Arnott.
W. Morrant Baker.
Richard Barwell.
Henry Charlton Bastian, M.D., F.R.S.
John Syer Bristowe, M.D., F.R.S.
William Henry Broadbent, M.D.
Bernard Edward Brodhurst.
Thomas Bryant.
George Buchanan, M.D., F.R.S.
Thomas Buzzard, M.D.
William Cayley, M.D.
William Selby Church, M.D.
Edward Clapton, M.D.
Sir Andrew Clark, Bart., M.D., F.R.S.
John Couper.
John Croft.
William Howship Dickinson, M.D.
John Langdon Down, M.D.
Sir Dyce Duckworth, M.D.
Alfred B. Duffin, M.D.
Arthur Edward Durham.
Arthur W. Edis, M.D.
John Eric Erichsen, F.R.S.
E. Headlam Greenhow, M.D., F.R.S.
Sir Wm. Withey Gull, Bart., M.D., F.R.S.
Samuel Osborne Habershon, M.D.
John Harley, M.D.
Ernest Hart.
Christopher Heath.
Sir Prescott Gardner Hewett, Bt., F.R.S.
Graily Hewitt, M.D.
J. Braxton Hicks, M.D., F.R.S.
Timothy Holmes.
Barnard Wight Holt.
Carsten Holthouse.
John Whitaker Hulke, F.R.S.
George Murray Humphry, M.D., F.R.S.
Jonathan Hutchinson, F.R.S.
J. Hughlings Jackson, M.D., F.R.S.
Sir William Jenner, Bart., M.D., F.R.S.
George Johnson, M.D., F.R.S.
Sydney Jones.
Charles Kelly, M.D.
John Langton.
George Lawson.
Henry Lee.
Sir Morell Mackenzie, M.D.
Arthur Trehern Norton.
Thomas William Nunn.
John William Ogle, M.D.
Sir James Paget, Bart., F.R.S.
Frederick William Pavy, M.D., F.R.S.
Thomas Pickering Pick.
Richard Douglas Powell, M.D.
Richard Quain, M.D., F.R.S.
J. Spence Ramskill, M.D.
George Owen Rees, M.D., F.R.S.
John Russell Reynolds, M.D., F.R.S.
Sydney Ringer, M.D., F.R.S.
James Rouse.
John Burdon Sanderson, M.D., F.R.S.
Septimus William Sibley.
Thomas Smith.
Reginald Southey, M.D.
Henry Gawen Sutton, M.B.
Edward Symes Thompson, M.D.
Sir Henry Thompson.
William Spencer Watson.
Hermann Weber, M.D.
Samuel Wilks, M.D., F.R.S.
Alfred Willett.
Charles Theodore Williams, M.D
Francis Willis, M.D.

ARRANGED ACCORDING TO DATE OF ELECTION.

1868 William Cholmeley, M.D.
Constantine Holman, M.D.
Thomas Tillyer Whipham, M.B.
Christian G. H. Baümler, M.D.
John Cavafy, M.D.
Frederick James Gant.
James Grey Glover.
T. Henry Green, M.D.
Howard Marsh.
Arthur Bowen Richards Myers.
Charles Prentis.
Adolphus A. Rasch, M.D.
Hugh James Sanderson, M.D.
Edgcombe Venning.
Sir Thomas Spencer Wells, Bart.
John Ford Anderson, M.D.
George Granville Bantock, M.D.
William H. Brace, M.D.
George Charles Bright, M.B.
Frank W. Cooper.
Julian Evans, M.B.
Edward Hooper May, M.D.
Henri Gueneau de Mussy, M.D.
William Warwick Wagstaffe.
Edwin T. Watkins, M.D.
William Ogle, M.D.
Protheroe Smith, M.D.
James Edward Pollock, M.D.
Franz Oppert, M.D.
William Henry Holman, M.B.
William V. Snow, M.D.
Charles Drage, M.D.
John Tatham, M.D.
Frederick Royston Fairbank, M.D.
Henry A. Reeves.
Michael W. Rice, M.D.
William Henry Day, M.D.
John Meaburn Bright, M.D.
Berkeley Hill.
Louis Stromeyer Little.
John Crockett Fish, M.D.

1869 Robert Brudenell Carter.
Leonard William Sedgwick, M.D.
J. Warrington Haward.
Henry Frederick Augustus Goodridge, M.D.
Olliver Thomas Duke, M.B.

1870 William Rhys Williams, M.D.
Thos. Clifford Allbutt, M.D., F.R.S.

1871 Julius Althaus, M.D.
Robert M. Gover, M.B.
Sir William Mac Cormac.
Alfred Playne, M.B.
William F. Butt.
George Wight, M.B.
Ebenezer Diver, M.D.
George Vivian Poore, M.D.
William Edward Stewart.

1872 Thomas Cooke
J. Burney Yeo, M.D.
Henry Harris, M.D.
William Pugin Thornton.
Robert Liveing, M.D.
Anderson Critchett.
J. C. J. Fenwick, M.D.
Andrew J. Myrtle, M.D.
Sir William Bartlett Dalby.
Thomas Ridge Jones, M.D.
George Slight, M.D.
Henry Sutherland, M.D.
Thomas Stretch Dowse, M.D.
William Wilberforce Smith, M.D.
Gifford Ransford, M.D.

1873 William Julius Mickle, M.D.
Robert William Parker.
David Lloyd Roberts, M.D.
George Henry Savage, M.D.
Heinrich Port, M.D.
Edwin Chisholm, M.D.
Thomas Churton, M.D.
C. de Lacy Lacy, M.B.
William Johnson Smith.
William Hope, M.D.

1874 John Hammond Morgan.
Edward R. Rowland.
Claudius Galen Wheelhouse.
Charles Douglas F. Phillips, M.D.
W. M. Whistler, M.D.
Edward C. Stirling, M.D
William Henry Bennett.
Frederick G. Ree.
William Travers, M.D.
William Brown Holderness.
Andrew Clark.
Arthur Wolcot Nankivell.

1875 Thomas Barlow, M.D.
Marcus Beck, M.S.
Sidney Coupland, M.D.
Edward Bellamy.
Clinton T. Dent.
C. D. B. Hale.
Frederick Bowreman Jessett.
Edward Liveing, M.D.
F. J. Marshall.

1875 Edward Nettleship.
William J. Walsham.
Rickman John Godlee, M.S.
William Richard Rogers, M.D.
Arthur Paul Sherwood.
T. Gilbart Smith, M.D.
James Frederic Goodhart, M.D.
William Richard Gowers, M.D., F.R.S.
William Smith Greenfield, M.D.
Charles Macnamara.
Shirley F. Murphy.
Herbert W. Page.
Frederick Taylor, M.D.

1876 Arthur E. J. Barker.
Horatio Percy Symonds.
James Godfrey Thrupp.
A. Balmanno Squire, M.B.
Archibald Weir, M.D.
David White Finlay, M.D.
Henry Greenway Howse, M.S.
John H. Waters, M.D.
Furneaux Jordan.
R. Clement Lucas, B.S.
James Mann Williamson, M.D.
George Buckston Browne.
Arthur Edwin Temple Longhurst, M.D.

1877 Robert Hogarth Clay, M.D.
A. Pearce Gould.
Edward Milner.
Henry Radcliffe Crocker, M.D.
David B. Lees, M.D.
Walter Hamilton Acland Jacobson, M.S.
Isambard Owen, M.D.
William Ewart, M.D.
Henry Morris, M.B.
William Miller Ord, M.D.
Walter Rivington, M.B.
Henry Rayner, M.D.
Edward Seaton, M.D.
Henry Ambrose Lediard, M.D.
Bernard Roth.
William A. Skinner.
John Tweedy.
Henry Hugh Clutton.
Malcolm Alex. Morris.

1878 Alexander Collie, M.D.
George P. Field.
Thomas Warner Lacy.
Thomas Colcott Fox, M.B.
Felix Semon, M.D.
Henry de Fonmartin, M.D.
C. H. Golding-Bird, M.B.
Donald Wm. Charles Hood, M.D.
Sir Joseph Lister, Bart., F.R.S.
Francis Thomas Tayler, M.B.
F. de Havilland Hall, M.D.
Storer Bennett.
Sir William Stokes, M.D.
William Allen Sturge, M.D.
William Joseph Tyson, M.D.
W. Maunsell Collins, M.D.
James Barry Ball, M.D.
William Johnston, M.D.
Charles Robert Bell Keetley.
William Appleton Meredith, C.M.
Frederick William Strugnell.

1879 William Adams.
William Edward Burton.
James Magill, M.D.
Wm. John Vereker Bindon, M.D.
Edward Markham Skerritt, M.D.
Henry Wilcox, M.B.
James Inkson, M.D.
John Abercrombie, M.D.
F. G. Dawtrey Drewitt, M.D.
Stephen Mackenzie, M.D.
William Harrison Cripps.
Francis Patrick Staples.
Geo. Courtenay Henderson, M.D.
Thomas John Maclagan, M.D.
James Edward Adams.
Henry Davy.
Thos. Walter Harropp Garstang.
George Lichtenberg, M.D.
Charles W. Mansell Moullin.
John Reuben Lunn.
Armand de Watteville, M.D.
George P. M. Woodward, M.D.
J. Neville Davies-Colley, C.M.
Robert Peel.
Frederic S. Dennis, M.D.

1880 John Wood, F.R.S.
T. Mark Hovell.
Wyndham Cottle, M.D.
B. Ball, M.D.
Henry Francis Baker.
Bernard O'Connor, M.D.
Charles Edward Beevor, M.D.

1881 George Henry Makins.
Robert William Burnet, M.D.
James Kingston Fowler, M.D.
Charles Edward Harrison, M.B.
Malcolm Macdonald McHardy.
Hugh Alex. Gordon, M.D.
Rushton Parker.

1881 John Williams, M.D.
Montagu Lubbock, M.D.
James Black.
Charles Creighton, M.D.
William Pasteur, M.D.
Henry Fraser Stokes.
John Caldwell Uhthoff, M.D.
Henry Trentham Butlin.
H. A. Powell.

1882 George Robertson Turner.
E. Noble Smith.
Robert William Goldie.
Walter Baugh Hadden, M.D.
Frederick Charles Barker, M.D.
William Henry Kesteven.
Frederic Morell Mackenzie.
A. T. Myers, M.D.
Daniel Colquhoun, M.D.
Seymour Taylor, M.D.
Francis Charlewood Turner, M.D.
Philip Henry Bindley, M.B.
Edward George Whittle, M.D.
D. H. Goodsall.
Frederick Henry Spooner, M.D.
J. W. Dennis Dallaway.
Frederick Haycraft Berry, M.D.
Herbert Collier, M.D.
Samuel West, M.D.
Emile Emond, M.D.
Eugene Goddard, M.D.
Charters James Symonds.
Angel Money, M.D.
Alfred G. Bateman, M.B.
C. F. Coxwell, M.B.
George Allan Heron, M.D.
Augustus Joseph Pepper, M.B.
Edward Clapham, M.D.
Harrington Sainsbury, M.D.
George Thin, M.D.
Edwin Francis White.

1883 Charles Gross.
Anthony A. Bowlby.
James Anderson, M.D.
Cecil Yates Biss, M.D.
Percy Kidd, M.D.
William Henry White, M.D.
George Oliver, M.D.
Hubert Montague Murray, M.D.
Robert Fitzroy Benham.
William Henry Allchin, M.B.
John Mitchell Bruce, M.D.
William Arbuthnot Lane, M.S.
Bernard Pitts.
Winckworth Tonge Smith, M.D.

1883 William Hale White, M.D.
William Coode Adams, M.B.
William Anderson.
Robert Leamon Bowles, M.D.
James Dixon Bradshaw, M.D.
George Henry Jackson.
George Hunt Orton, M.B.
John Liston Paul, M.D.
Thomas Laurence Read.
Frederick Thomas Roberts, M.D.
Charles Alfred Ballance, M.B.
Frederick Heales Carter.
John Hopkins.
John Rostron Woodcock.
Alexander Wm. Macfarlane, M.D.
Edward Cuthbert Ring.

1884 Frederick Willcocks, M.D.
R. Percy Smith, M.D.
Edgar Duke.
John Mackern, M.B.
Paul M. Chapman, M.D.
Wilmot Parker Herringham, M.B.
Philip Henry Pye-Smith, M.D., F.R.S.
Charles Stonham.
Dudley Wilmot Buxton, M.D.
Edwin Worts.
Seymour J. Sharkey, M.B.
Frederick Treves.
William Elgar Buck, M.D.
John James Pringle, M.B.
Frederick Lucas Benham, M.D.
Walter Edmunds, M.D.
Arthur Fergusson McGill.
Stephen Paget.
Lambert Hepenstal Ormsby, M.D.
John Poland.
Edwin Leonard Adeney, M.D.
Victor Horsley, F.R.S.
Henry Carr Maudsley, M.D.
Bilton Pollard.

1885 Frederick Spicer, M.B.
Herbert Larder.
A. Hughes Bennett.
James Berry.
Frederick Walker Mott, M.D.
George Newton Pitt, M.D.
John Chalmers, M.D.
W. C. Everley Taylor.
Sidney Philip Phillips, M.D.
A. W. Mayo Robson.
Thomas Wakley, jun.
Herbert William Allingham.
Thomas William Thursfield, M.D.

1885 Alexander Dalton Murray, M.B.
Robert Maguire, M.D.
Robert Alexander Gibbons, M.D.
Thomas Fitz-Patrick, M.D.
Tom Henry Sawtell, M.B.
Wm. Dobinson Halliburton, M.D.
Henry Brewer Tait.
Charles Rotherham Walker, M.D.
Richard Caton, M.D.
Arthur Henry Robinson, M.D.
Edward Sabine Tait, M.B.
William Bruce Clarke.
Charles Barrett Lockwood.
Charles West, M.D.
Reginald J. Ryle, M.D.
J. Michell Clarke, M.B.
Henry George Armstrong.
Roderick Maclaren, M.D.
W. Watson Cheyne.
Edward Liveing Fenn, M.D.

1886 Thomas Dixon Savill, M.D.
John Cahill.
Charles Henry Wade.
Benjamin Wainewright.
Waren Tay.
William John Penny.
William Henry Battle.
James Hardie, M.D.
Francis Henry Hawkins, M.B.
R. Hingston Fox, M.D.
Henry Edward Juler.
John Ward Cousins, M.D.
Joseph Frank Payne, M.D.
T. Pridgin Teale.
H. H. Lankester.
Arthur T. Davies, M.B.
William C. Bull, M.B.
Charles Herbert Thompson, M.D.
Arthur Quarry Silcock.
Henry Handford, M.D.
Alfred Scott.
Albert Wilson, M.D.

1887 Archibald E. Garrod, M.D.
H. T. Rutherfoord, M.B.
Kankai Totsuka.
Thomas Frederick Pearse, M.D.
Thomas Oliver, M.D.
Francis George Penrose, M.D.
Edward Ager Jones.
Samuel Herbert Habershon, M.D.
John Knowsley Thornton.
John Bland Sutton.
Oswald Auchinleck Browne, M.B.
Albert C. Butler-Smythe.
Joseph Arderne Ormerod, M.D.
C. J. Arkle, M.D.
J. H. E. Brock, M.B., B.S.
Francis William Clark.
A. H. Weiss Clemow, M.D., C.M.
Charles E. H. Cotes, M.B.
E. Hurry Fenwick.
Henry William Freeman.
R. Lawford Knaggs, B.C.
John D. Malcolm, M.B., C.M.
Sidney Martin, M.D., B.S.
Thomas Horrocks Openshaw, M.B.
Walter Pearce, M.D.

1888 A. G. Barrs, M.D.
J. W. Batterham, M.B., B.S.
Montagu Handfield-Jones, M.D.
Alfred Rice Oxley, M.D.
Arthur Roper.
Robert Henry Scanes Spicer, M.D.
Campbell Williams.
Henry Arthur Martin, M.D.
Frederic S. Eve.
Alexander Morison, M.D.
Frederick Page, M.D.
Frederick J. Smith, M.B.
Frederick R. Walters, M.D.
Claude Wilson, M.D., C.M.
Charles H. Gage-Brown, M.D.
Arthur Jamison, M.D., C.M.
J. H. Menzies.
Frank Ernest Roberts.
George Stoker.
Robert Ashton Bostock.
Hugh Armstrong.
Hyde Marriott, M.B.
Percy Warner.
J. F. James, M.B.
Edwin A. Barton.
W. P. May, M.B.

REPORT

OF THE

COUNCIL OF THE CLINICAL SOCIETY.

DECEMBER, 1887.

THE Council has the pleasing part of congratulating the Society on its continued and progressive success. Numerically and financially the condition of the Society is sound, and its ordinary work has been carried on with great activity.

We now number 464 members, of whom 336 are resident and 113 non-resident members, 3 honorary members, and 12 foreign honorary members. Seventeen resident and 5 non-resident members have been elected during the past year. Eight have resigned, and death has deprived the Society of six ordinary members and one foreign member. The deaths we have to deplore are those of Dr. Carrington, a member of the Council at the time of his death, Dr. Wilson Fox, a former vice-president, Dr. Meadows, Mr. Teevan, and Dr. de Castro. Sir George Burrows, an honorary member, has quite recently died, and the foreign member removed by death from our roll is the illustrious German surgeon von Langenbeck.

As announced in the last report, in order to extend the influence of the Society, and to disseminate the clinical experience recorded in its *Transactions*, the Council decided to send a copy each year to about fifty of the principal medical libraries abroad. This has been done this year, and in addition the whole of the back numbers of the *Transactions* have been sent to two of the most important foreign medical societies with libraries, namely, the Medicinische Gesellschaft of Berlin

and the Kaiserliche und Königliche Gesellschaft of Vienna. To provide extra copies for presentation, to meet the requirements of the increasing number of members, and to retain a certain stock for future demands, the issue has been increased from 500 to 750 copies.

The recently published twentieth volume is behind none of its predecessors in value. It contains a report of the highest interest and importance, namely, that of a Committee appointed in 1884 in connection with the discussion arising out of a communication by Mr. Morrant Baker, to investigate the joint disease in connection with locomotor ataxy. The Committee, which had the good fortune to be presided over by Sir James Paget, examined not only the patients and specimens exhibited at the Society, but a number of the patients and specimens in hospitals and infirmaries, and analysed the cases recorded in English and foreign literature. The result of this inquiry is a report of permanent scientific importance and interest, reflecting great credit on the Committee and the Society. The Council feels that the warmest acknowledgments are due to Mr. Bilton Pollard, the Hon. Secretary to this Committee, not only for the time and labour expended on the report, but for the conspicuous ability displayed throughout its pages. This report and the discussion, of which a *verbatim* report was issued in vol. xviii, represent in the most complete manner the knowledge and opinions held in this country on the subject of the connection between joint diseases and locomotor ataxy.

The Myxœdema Committee has taken longer to complete its labours than was anticipated, but this is owing to the thoroughness with which the investigation has been prosecuted, and the wide range of the inquiry. It is confidently expected that the labours of the Committee will be concluded during the present session. The work of this Committee, especially the extensive tabular record of cases, has already cost a large sum of money, which in part accounts for the small balance in the Treasurer's hands. The Council has, however, the gratifying announcement to make that Dr. Ord, the Chairman of the Committee, whose name is indissolubly connected with the subject of the investigation, has generously volunteered to contribute £100 towards the expenses of the production of the report, which offer has been gratefully accepted. This is the largest and most important work of the kind hitherto undertaken by the Society, and on account of the interest attaching to the subject, which more-

over is particularly identified with the Society, the great labour that has been expended by the Committee on the inquiry, and the size the report will attain, the Council has decided to print it, when completed, as a separate volume. A copy will, of course, be presented to every member of the Society, but the volume will also be published and offered for sale.

The Committee on Scoliosis is still at work, and has secured the co-operation of several gentlemen with experience of this deformity. They have also examined several modes of treatment, and after a further period of observation of these cases will report the results to the Society.

On all grounds, therefore, there are encouraging signs of the vigour and usefulness of the Society.

CLINICAL SOCIETY OF LONDON.—BALANCE SHEET, 1886-87.

1886-7	Dr.	£	s.	d.	1886-7	Cr.	£	s.	d.
	To Balance at Bank, 1st January, 1887 .	94	6	6		By Cost of *Transactions*, Vol. XX:			
						Paper, printing, and binding . .	165	19	6
	„ 301 Annual subscriptions at 21*s*. . . .	316	1	0		Illustrations	55	6	6
	„ 3 ditto received in advance for 1888 .	3	3	0		Delivery	6	10	6
	„ 19 Admission fees at £2 2*s*.	39	18	0		Advertising and Longmans' commission	5	1	0
	„ 3 Non-resident composition fees at £2 2*s*.	6	6	0		„ Meetings:			
						Expenses of rooms	78	15	0
	„ Sale of *Transactions*:					Refreshments and attendance . .	31	10	0
	By Longmans	20	15	10		R. Coldrey for attendance . . .	7	10	0
	„ 53, Berners Street . . .	1	2	9		Secretarial assistance	18	18	0
	„ Composition fees . . .	19	19	0		Instruments	4	2	0
						Microscopes	0	6	0
	„ Dividends on Consols:								
	January	8	14	0		„ Printing Myxœdema Tables (Balance) .	58	11	2
	July	8	14	9		„ Payment to Scoliosis Committee . .	10	0	0
						„ Collection of subscriptions . . .	14	14	0
						„ Printing and stationery	10	18	10
						„ Brass plate for door	0	16	6
						„ Cheques	0	5	0
						„ Petty cash	12	6	4
						„ Balance at Bank, 1st January, 1888 .	37	10	6
		£519	0	10			£519	0	10

Amount of Stock standing in the names of the Trustees, January 1st, 1888 . . . £600.

Examined and found correct, 10*th January*, 1888. { A. MONEY, W. J. WALSHAM, } *Auditors.*

CHRISTOPHER HEATH, *Treasurer.*

ROBERT WM. PARKER, *Hon. Sec.*

COMMUNICATIONS.

I.—*Pemphigus, with Unusual Affection of Cicatrices: Arsenical Pigmentation. With Cases.* By H. Handford, M.D. *Read October* 14, 1887.

THE patient, a girl æt. 13, has always been delicate. There is a history of phthisis on the mother's side. The father is a sweep and is in good health. The mother has never been strong. No other member of the family has suffered from a similar skin affection. There is no history of nervous affections or of syphilis.

In March, 1886, the patient's illness began with an eruption of small blisters on the buttocks and inner side of the thighs; somewhat later the eruption appeared on the outer and back part of both shoulders *symmetrically*. Afterwards small blisters, some with clear, others with sanguinolent contents, came out on the tongue and on the inside of the lips and cheeks. She remained in bed eight weeks, and was treated with Donovan's solution and large doses of the ammonio-citrate of iron. She improved considerably, but a fortnight later relapsed, and was admitted under my care into the Nottingham General Hospital.

She was well developed, fairly nourished, but pale. There was a bullous eruption in all stages of cicatrisation, affecting chiefly the buttocks and the inside of the thighs. There were also *symmetrically* placed bullæ on the inside of the knees, round the ankles, and on the toes. They further affected the shoulders, elbows, and wrists, chiefly on the extensor surfaces, and both the dorsum and palms of the hands. The eruption comes out in crops, preceded and accompanied by high tem-

perature, occasionally reaching 104° F. The first stage is a polymorphous erythema, but much of this resolves without proceeding to blister formation. The contents of the bullæ are mostly clear serum ; in some places, especially on the tongue, sanguinolent, and in others purulent. The bullæ on healing as a rule leave a branny, scaly condition, and later a smooth pigmented cicatrix. Besides these regular attacks, of which there have been four or five, isolated bullæ have continued to appear almost daily during the illness. The bullæ with serous contents were tense and but little painful. Those with purulent contents were flaccid, painful, and surrounded by an angry areola. During the latter part of the illness the majority of the bullæ became purulent very speedily ; in many no serous stage was noticed. On two separate occasions the areolæ surrounding a group of purulent bullæ became confluent, and gave rise to a widely diffused painful swelling, associated with persistent high temperature, probably due to septic absorption, and allied to, though distinguishable from, erysipelas.

With regard to the affection of mucous membranes there was conjunctivitis but no distinct bullous eruption on the conjunctiva. The eruption was distinct on the lining membrane of the nose and in the pharynx. There were also bullæ and excoriations on the vaginal mucous membrane, and about the anus. For a short time the patient suffered from diarrhœa, but the implication of the intestinal mucous membrane must remain doubtful.

The patient very gradually improved, and left the hospital nine months after the beginning of her illness. She has continued under observation up to the present time (March, 1887). Isolated bullæ still make their appearance, but she remains much improved in health, and has gained considerably in weight.

About five months after the commencement of her illness the skin of both hands and wrists was noticed to be uniformly red and cicatricial, as if the patient had just recovered from a severe burn. On the dorsal aspect of the fingers, hands, wrists, feet, and ankles were scattered portions of cicatricial tissue, raised and thickened, and covered with groups of opaque white spots as large as a millet seed, and resembling to the naked eye a miliary tubercle, just beneath the epithelium (Plate I). By the time the patient left the hospital these patches had almost entirely disappeared.

On dissecting the opaque white spots *in situ* with a needle

they were found to be situated in the deeper layers of the epidermis, and to consist, as shown by microscopic examination, of degenerating shed epithelium cells closely packed together. No pus or serum could be detected in any of them, though they looked as if they might contain minute droplets of fluid. These millet-seed bodies were very distinct and sharply circumscribed. They appear to be caused by an undue proliferation of the epithelium, as the thickened portions of cicatrix in which they are scattered are due to an irregular growth of the connective-tissue elements. It is possible that this condition, as well as the pigmentation to be described below, was due to the prolonged use of arsenic.

She had been taking arsenic most of the time since her illness began; in July her dose was eight minims of the Liquor Arsenicalis three times a day, and in August this was increased to fifteen minims, and was continued to the end of October. In the middle of October the skin over the whole body was noticed to be dry and scaly, and in most places darkened in colour. It was darkest in the axilla and groins, and over the loins and lower part of the abdomen (Plate II). At first I thought the colour was due to want of cleanliness, and complained to the Sister of the ward. She assured me that the patient was regularly having the baths on alternate days that I had prescribed some weeks previously, and was well washed with soap and water. I proceeded to satisfy myself, however, that want of cleanliness was not the cause, and found that though persistent friction with soap and water removed the loose superficial scales, and made the spot somewhat lighter, no material alteration in colour could be effected. A similar slight improvement was produced by scraping away the superficial cells with a knife, thus showing that though some of the pigment was in the superficial epithelial cells the greater part was in the rete. That the alteration in colour was of the nature of a true pigmentation is, I think, proved by the presence of a few small patches of white unaltered skin scattered here and there in the dark areas, as illustrated in the drawing.

The patient was ordered to be put in a wet pack for three hours three times a week, and eight days later the arsenic was stopped altogether. By November 30 the brown colouration of the abdomen was very much less, and the skin was soft, smooth, and normally moist. At the present time (March, 1887) the brown colouration is very slight, but can hardly be said to have entirely disappeared.

It is true that the bullæ of pemphigus on healing leave behind for a time a pigmented cicatrix, but in this patient during the whole course of the illness *the eruption never appeared on the abdomen.* I have been forced therefore to attribute the pigmentation to the large dose of arsenic taken for so long a time.

With regard to the question of the presence of micro-organisms in the contents of the bullæ, micrococci were found in those with purulent contents, but not in those containing clear serum. Many cover-glass preparations were made on several occasions.

Neither could any micro-organisms be detected in the cover-glass preparations, or grown on potatoes by inoculating them with the serum from a case of pemphigus affecting a girl, æt. 11, in whom the face, a small part of the neck, the palms and soles were the only parts free from the eruption. The bullæ came out a few at a time daily, and not in crops; they were not preceded by any noticeable erythema; they were mostly purulent at first, but yet tense. Some were sanguinolent. She died after the disease had lasted about a year and three quarters. No inspection of the body was obtained.

Pemphigus is not a very common disease. Hebra* only saw 100 cases in hospital and private practice during twenty years. Of these 50 were met with out of 233,000 cases in the Vienna General Hospital, and 86,667 infants in the Foundling Institution. He says, in general one should be prepared to expect that pemphigus will in the end terminate fatally, and therefore the prognosis should always be guarded. Though the marked improvement in my first case is therefore satisfactory, I cannot consider her yet free from the risk of the disease eventually proving fatal.

The marked *symmetry* of the eruption was a noticeable feature in its early stage. It pointed, I thought, to syphilitic taint, and though no confirmatory history could be obtained, I treated the patient with iodide of potassium and mercury. But she very distinctly not only failed to improve, but grew worse, and I very shortly discontinued it.

The noticeable prevalence of the eruption (in fact almost its limitation) to the extensor surfaces of the upper extremities, the backs of the shoulders, the buttocks, inside of the knees, and the region of the feet and ankles suggests slight mechanical injury and irritation as an important cause in

* M'Call Anderson gives fifty-three cases of pemphigus amongst 24,891 consecutive cases of skin disease, *Treatise on Diseases of the Skin*, 1887.

determining the localization of the eruption; just as in urticaria, irritation of the skin, as with the finger tip, is followed by a crop of wheals, and one can write one's name on the patient's skin in wheals.

The use of arsenic in pemphigus is so much lauded by many writers that I think I pressed it in this case unduly. I never saw in this case any benefit from its use, and after it was stopped the patient's improvement was much more rapid.

Quinine I think did some good, and was tolerated to a remarkable degree. The patient for several weeks took six grains four times a day, without any digestive disturbance, and without any deafness and ringing in the ears. In fact my experience in this case coincides with the teaching of the late Dr. Tilbury Fox in his work on skin diseases, viz. that in pemphigus quinine does more good than any other medicinal agent.

M'Call Anderson recommends tonics, and says, "Of these there are only two from which, as far as I am aware, much benefit can be expected—viz. quinine and arsenic. . . . Of these two remedies the palm must be decidedly accorded to arsenic. . . . . It will thus be seen that I cannot agree with Hebra, who wrote that he knew 'of no internal medicine which has proved efficacious against pemphigus.'"

With regard to arsenical eruptions Dr. Morrow* enumerates:—1. Erythema. 2. Papules. 3. Wheals, as in urticaria. 4. Vesicles, especially herpes zoster. 5. Pustules and ulcers. 6. Brownish pigmentation; greyish or brownish discolourations which are especially liable to occur upon the face and various parts of the body after its prolonged use.

Wilson, he states, reports the case of a patient with gutta rosacea, who had taken arsenic for two months when there was noticed a change in the colour of the skin, first over the abdomen, then on the neck, breast, face and hands. The face was of a yellowish brown colour, the eyeball dark, and the skin of the entire body more or less pigmented. Chronic erythema affected the palms. There were hard dry points at the orifices of the sweat-glands. The eyelids and the extremities were œdematous.

The same author relates a case of erythemato-papular eruption, with a greyish brown, almost black discolouration of the surface, especially marked over the abdomen and inner surface of the thighs.

Guaile reports that in fourteen children placed upon Fowler's

* *London Medical Record*, Jan. 15, 1887.

solution for four or five months there was observed a bronzed appearance similar to that of Addison's disease, beginning on the neck and extending to the chest, then to the abdomen and hands; at times it is seen on the back and legs. It disappears by desquamation in about four months.

M'Call Anderson, in his *Treatise on Diseases of the Skin*, which was published a few days ago, says that after arsenic has been given in full doses "the skin becomes dry, and deeper in tint, while, on covered parts especially, a pityriasis-like branny desquamation makes its appearance. An erythematous rash, too, is not uncommon, especially on the face, neck, palms and soles, and in the last situations this may be followed by great thickening and induration, which has a papulated character."

With regard to rise of temperature in pemphigus Anderson says, "Generally there is little or no fever, at all events I have never met with the so-called febris bullosa, or acute pemphigus."

The temperature chart which I produce shows that in this case a marked elevation of temperature accompanied (sometimes it preceded) each fresh crop of eruption. Though in some instances the excessive elevation of temperature (104° F.), was, I think, in part due to septic absorption supervening upon and complicating the eruption, in others no such cause could be alleged. The constancy with which each fresh crop of eruption was accompanied and sometimes *preceded* by malaise, furred tongue, and elevation of temperature points, I think, to rise of temperature being an integral part of the disease, and not merely an accidental concomitant.

Since the foregoing was written in the spring one fresh case of pemphigus and several of arsenical pigmentation have come under my notice.

A. B., æt. 12, a stout, well-developed, but somewhat pale lad was admitted in June, 1887, complaining of a skin affection, which commenced six months ago with an eruption of "blisters" which came out on the back of the neck, and soon spread to the whole of the body. There was considerable itching. Scattered over the body, but especially on the chest, was an abundant polymorphous erythematous eruption. The patches are very slightly raised, exceedingly irregular in shape, and frequently gyrate. Some proceed to the formation of bullæ, but the majority do not. It is seldom that more than two or three bullæ are visible at the same time; some have appeared

on the face and a few on the tongue. The contents are clear and serous, and dry up without becoming pustular.

The palms of the hands and soles of the feet sweat profusely and are generally quite wet and shining. The rest of the skin is dry. The skin of the palmar aspect of the hands, including the fingers, is thin and smooth from an absence of the parallel wavy lines of papillæ normally present. On the extensor surface of the joints between the two terminal phalanges of the fingers of both hands, the skin is indurated, smooth, and thickened. This condition is not due to any special form of work, for he is still at school. It very closely resembles, except in the sweating, and the absence of the peculiar affection of the cicatrices, the hands of the first patient (Ada McW.).

This condition of skin suggests an affection of the peripheral nervous system, and Dr. Pasquall Ferraro* has described in pemphigus foliaceus an advanced atrophic degeneration in the posterior horns of the dorsal spinal cord, and also in the peripheral nerves, ganglia of the posterior nerve-roots, and sympathetic ganglia. And, further, in the closely-allied affection, herpes zoster, both when occurring idiopathically, and when produced, as is supposed, by the administration of arsenic, there is ground for thinking that the eruption is due to a peripheral neuritis. Consequently, in the present case a careful examination was made with a view of detecting any change in the nervous system, but no very definite results were obtained. Sensation to contact, as estimated by a feather, was everywhere acute except on the palmar surface of the hands and on the soles of the feet. There it appeared slightly deficient independently of the possible blunting of sensation from the normal thickening of the skin. Sensation to temperature as estimated by test tubes containing water seemed slightly impaired in the same regions.

The plantar reflex was deficient, the cremasteric and epigastric acute. The knee-jerk was present on both sides, but deficient in sharpness.

He was treated by warm baths and afterwards by arsenic and soon went out much improved. When last seen in October the arsenic had been for some time discontinued. The sweating of the hands had ceased, and the glossy condition of the skin had diminished, but the erythematous eruption had again become very troublesome. It was chiefly

* Alterazioni istologiche del sistema nervoso nel pemfico foliaceo (*Morgagni*, 1886, No. 4).

crescentic in shape, and the boy complained that the skin itched very much before the eruption came out, but not when it was fully out. It did not resemble urticaria in appearance nor was it of such transient duration. A few bullæ of pemphigus have appeared again, some of them on the tongue. He has also been passing blood by the bowels for the past three weeks. There is some ground for supposing that this may be due to the eruption affecting the mucous membrane of the intestine.

The following are the two additional cases of arsenical pigmentation.

A schoolgirl, æt. 11, had previously had rheumatic fever and chorea, and for the last six years had suffered more or less from psoriasis. She had been taking arsenic for the chorea and skin affection for about six weeks before her admission into the Nottingham General Hospital under my care on March 26, 1887. On April 20, the dose of arsenic, which had previously been ♏viij of the Liq. Arsenicalis, was increased to ♏x three times a day. She continued the arsenic uninterruptedly except from April 2nd to the 4th, when it was temporarily omitted on account of gastric irritation. On April 20, there was a just perceptible darkening of colour of the skin of the abdomen. On June 4, the note in the case book runs: "The patient has gained flesh and strength, and the psoriasis has improved. She has continued the medicine of April 20 up to the present time. Her mother was quite alarmed at the altered colour of the skin. The patient has a warm bath twice a week and is quite clean; she has light, almost golden hair, grey eyes, with a very fair complexion and naturally a white skin. The skin of the abdomen and chest up to the mammæ and of the side up to and including the axillæ, and the skin of the back from the level of about the tenth dorsal spine downwards, is now of a dark brown colour. The face, neck, chest, and limbs are unaffected. The axilla, and especially the anterior folds, are very dark. The groins are not so much affected. The branny condition usually described is absent, and the skin is smooth and moist." From this date the arsenic was discontinued, but resumed in small doses a month or two later on account of a fresh outbreak of psoriasis. On October 1, the pigmentation had very largely, but not entirely, disappeared.

The last case I will give very shortly, as it is only a repetition of the previous one.

H. W., æt. 10, came up as an out-patient on December 11, 1886, suffering from chorea. She was ordered to take Liq. Arsenicalis ɱij with some iron thrice daily. She continued to take the arsenic in the same dose till April 2, 1887, and did not experience any gastric disturbance, epigastric pain, or affection of the eyelids or conjunctiva. At this date—that is, after taking arsenic in small doses for nearly sixteen weeks—her mother complained that the child's skin was becoming dark. The distribution of the pigmentation was exactly the same as in the previous case. The child is still under observation, but after six months the skin has scarcely resumed its natural colour.

As a *résumé* I may state:

1. That I have found quinine and iron of more value than arsenic in pemphigus; in fact, in the three cases in question arsenic has not appeared to produce any beneficial effect.
2. That I have failed to find organisms in the clear fluid from pemphigus bullæ.
3. That I have not succeeded in finding any *definite* evidence of implication of the peripheral nerves as shown by alteration in the cutaneous sensibility or affection of the reflexes; though the atrophied glossy condition of the skin of the hands in two of the cases strongly suggests a nervous origin.
4. That the prolonged use of arsenic may give rise to pigmentation of the skin, chiefly affecting the abdomen, lower part of the chest, lumbar region of the back, axillæ, groins, and inner side of the thighs.
5. That the rough branny condition of the pigmented skin previously described is not constant, but that while deep and pigmented it may be smooth and moist.

That small doses—Liq. Arsenicalis ɱv—x ter die—continued for about two months, may produce it without having given rise to any of the more common physiological effects of arsenic; and that the pigmentation disappears slowly in from one to four months, or rather longer.

Temperature in case of Ada McW—.

		M.		E.
May	29	—	...	98·8°
	30	97·4°	...	98·4
	31	98	...	98·8
June	1	98·6	...	98·4
	2	97·6	...	99·4
	3	99·8	...	99·8
	4	97·8	...	98·8
	5	98·4	...	98·8
	6	98·4	...	102·8
	7	99·2	...	103·6
	8	100·4	...	99·6
	9	98	...	99 6
	10	100·8	...	103·8
	11	103·2	...	103·8
	12	103	...	103·2
	13	102·4	...	100 6
	14	99	..	99
	15	98	...	97 8

Then the temperature continued between 97·4° and 99° till June 28. From June 9—16 the temperature was taken every four hours, and the highest point reached was 104°.

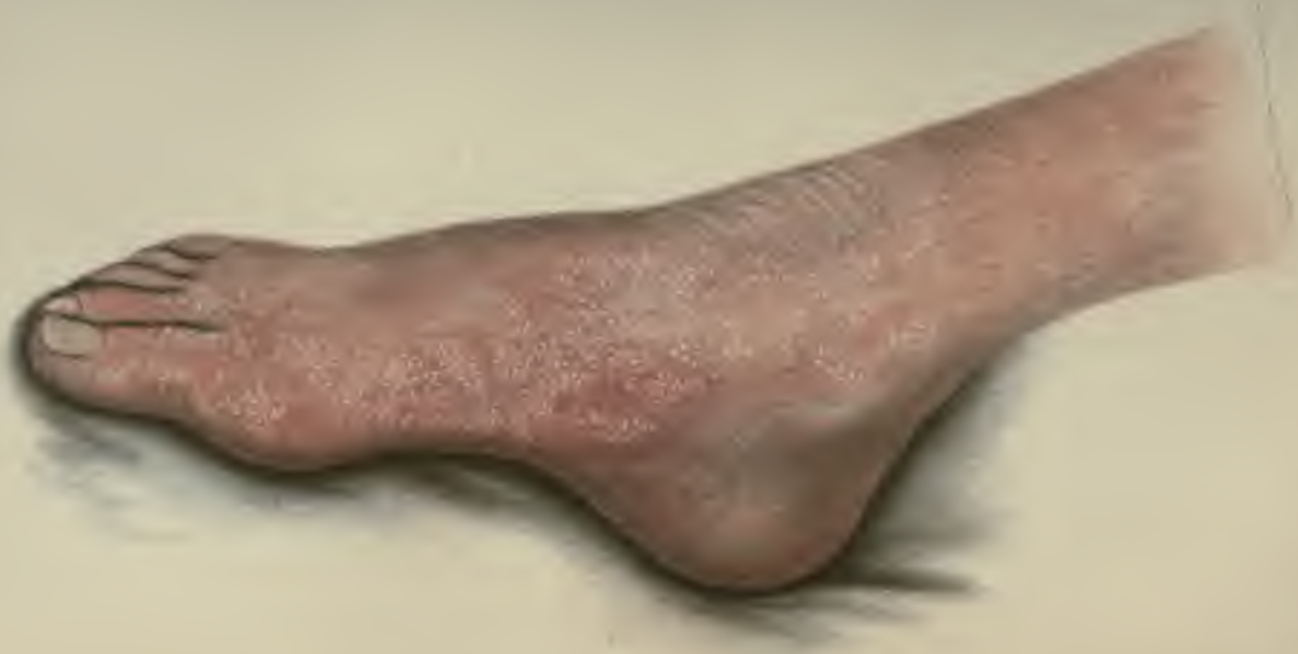
		M.		E.
June	28	98·6°	...	100·6°
	29	99·4	...	101
	30	100	...	102·4
July	1	98·8	...	102·4
	2	101·2	...	102·4
	3	100·4	...	101·6
	4	99·8	...	101·2
	5	98·8	...	101
	6	98·8	...	100·8
	7	97·2	...	99·8
	8	98·8	...	100·8
	9	98·4	...	99·8
	10	100·2	...	102
	11	99·8	...	101·2
	12	100·4	...	100·4
	13	99·6	...	99·4
	14	99	...	99·4
	15	98·6	...	98·8

The temperature then continued normal for some weeks, but there were subsequent similar febrile attacks.

DESCRIPTION OF PLATE I.

Dr. Handford's Case of a Peculiar Affection of the Cicatrices in Pemphigus.

At a little distance the clusters of miliary points are well seen. The affection was probably of the nature of milium, though the appearance differed somewhat from milium as seen elsewhere.



DESCRIPTION OF PLATE II.

Dr. Handford's Case of Arsenical Pigmentation.

The special distribution of the pigmentation and the rough, scaly condition of the skin, are well represented. The spots of unaltered skin near the right anterior superior spinous process, and the two fainter patches on the same side, are faithfully reproduced and form valuable points of contrast.

II.—*A Case of Recovery from a Bullet Wound of the Liver.* By H. A. Lediard, M.D. *Read October* 14, 1887.

J. J., a constable of the Cumberland County police force, æt. 33, a strong man, of stout build, came under my care on the night of October 28, 1885, having been shot whilst pursuing some burglars. He was called suddenly out of his house, at 11.15 P.M., in a partly-dressed condition, and had not run more than 40 or 50 yards when he was fired upon. He was immediately assisted to his bed, and when I reached him about an hour later he was deadly pale, very collapsed, and quite pulseless at the wrist.

On examination, an entrance wound was seen on the right chest wall, situated 4 inches below the nipple and a quarter of an inch to the outer side of the nipple line. There had been very little bleeding.

On passing the hand round the back a hard substance was felt under the integument near the spine, over the last rib on the same side of the trunk. I made an incision over the hardness and extracted a large bullet, without the patient being aware of what was being done. I avoided probing the wounds and was not sure whether the ball had passed round the chest or through the body. The collapse was very slow in passing off, and it was not until a little stimulant was given that the pulse became perceptible at the wrist.

The wounds were dressed with oiled lint, and my friend Dr. Dundas Helm sat up with the patient all night.

The man who fired the shot was probably about 4 yards off, and 2 or 3 yards to the policeman's right, and the patient received the shot whilst grasping at another fugitive immediately in front of him, for at the time he was chasing four men. This explains how it was that the ball was extracted at a level lower by 4 inches than the entrance wound, and whereas the point of extraction was but 2¼ inches from the spine of the vertebræ in the right loin, the entrance wound was external to the right nipple. Now, if it is assumed that the policeman's body was bent forwards at an angle of

about 60°, the line of the bullet track would be horizontal, and this I believe to have been the case.

The only other way to account for the bullet passing through the body from above downwards, *i. e.* if the body was erect, would be by supposing that the bullet was deflected by a rib, but of this there was no evidence.

A distance of 13 inches separated the two wounds when a tape was passed round the chest from entrance to the extraction wound.

There was no cough, dyspnœa, or hæmoptysis, but pain over the right hypochondrium soon appeared as a sharp stitch and the temperature rose. Movement of the body voluntarily or by others, however, caused pain and urgent dyspnœa. At the end of forty-eight hours the temperature was 103°, resp. 36, and pulse 120. Upon the third day there was well-marked jaundice, and the urine was coloured with bile, so that there was no longer any doubt as to the course taken by the bullet.

Signs of extravasation of blood soon appeared round the entrance wound, but nowhere else. The patient assumed a dorsal position and the legs were somewhat drawn up. On either the third or fourth day it was noticed that percussion over the right lateral chest wall was tympanitic for an area measuring 6 inches horizontally by 3¾ vertically. This symptom was present more or less for many weeks; sometimes it was thought to have cleared up and then it was as extensive as ever. Associated with this tympanitic percussion was considerable tenderness. There could now be no doubt that the under surface of the lung had not escaped injury, and that, at least, a graze had caused a limited pneumothorax. There was no evidence at any time that air entered the pleural cavity from the wound of entrance, as the tympanitic area came and went long after the closure of this wound.

On the eighth day the jaundice was observed to be diminishing. On the ninth day the extraction wound suddenly commenced to discharge a large amount of sanious pus, the temperature being about 101°. On the following day the discharge from the same spot was coloured with bile and continued to be so coloured for many weeks. On the thirteenth day there were some doubtful signs of dulness over the lower part of the right lung, which developed into a limited pneumonia, the respirations rising to 40 and the temperature to 103°. About the twentieth day the expectoration began to change to a gummy discharge, which rapidly became a profuse mix-

ture of ropy pus and froth of far too large an amount to be accounted for by any lung condition, as during bouts of severe coughing the pus streamed from the nose as well as from the mouth. Some two to three pints were thus got rid of in twenty-four hours, the quantity being estimated by keeping all that was spat up. At this time there was considerable dulness and fulness over the right lower chest wall and I concluded that an empyema had formed and discharged through a bronchus; this view may be supported by the fact that the tympanitic area was always more marked after coughing.

The absence of any rigor and the pulse, which at this time was only about 100, allowed room for hope of ultimate recovery; at the same time the stomach rarely rejected liquid nourishment and the secretions were good.

The posterior wound was syringed daily with boracic solution, but the entrance wound gave very little trouble.

The taste of the expectorated matter to the patient was very bitter, but it was not tinged with bile, and a sample submitted to careful analysis failed to show a trace of bile, showing that the abdominal wounds were not in communication with the pleural cavity.

The bilious pus from the loin was always perfectly sweet, but the drainage-tube was often blocked with thick tenacious mucus. This wound was dressed from first to last with either wood-wool, or moss.

With gradual lessening of the discharge from the empyema the chest wall flattened down, and the patient began to lie upon the left side as the dorsal position caused a flow of matter into the bronchial tubes.

On the forty-second day the patient sat up for the first time for half an hour. At this time the expectoration had dwindled down to about 15 oz. in twenty-four hours, and improvement continued slowly and surely, so that in the third week in January, *i. e.* three months after the injury, he was able to give evidence at the trial, his cough having ceased and his wounds having healed.

In April, 1886, he resumed his duties in the police force as a sergeant.

My thanks are due to Dr. Walker, of Newcastle-on-Tyne, public analyst for Carlisle, for kindly testing the samples of discharge from the posterior wound, and expectorated matter from the chest. He found that the ordinary tests gave bile reactions when applied to the discharge from the extraction wound, and he agreed with me that with the

microscope large liver-cells stained yellow with bile were present, and that the red particles found were hematin. Dr. Walker further reported that neither bile acids nor bile pigments were present in the discharge from the chest which came through the mouth. The weight of the bullet is 3 drachms 39 grains.

Bullet wounds of the liver have generally a high mortality, but a distinction has to be made between wounds of the convex surface and wounds of the concave surface, recovery being quite possible in the first class of cases, but wounds of the second class mostly complicated and immediately fatal. There seems to be little reason for doubting that in the present instance the ball passed through the convex surface of the liver.

Mayer, in a careful monograph on this subject, has calculated the mortality of liver bullet wounds to 34·4 per cent. only, founded on 61 cases, of which 21 died. Bell and Hennen maintain, however, that a deep wound of the liver is as fatal as if the heart itself was pierced, and Pirogoff considers the same absolutely fatal. Prognosis, however, depends on complications ('Deutsche Chirurgie') 1885. From the *Medical and Surgical History of the War of the Rebellion* (1876) I gather that 173 cases of shot wounds of the liver appear. In 59 the injury to the liver was dominant. In 114 the liver wound was complicated by other lesions to viscera, bone or blood-vessels.

Of the 59 cases in the first group 25 had a favorable issue. The names, however, of 34 patients are given where comparatively uncomplicated shot wounds of the liver proved fatal.

Thirty-seven patients recovered from shot wounds believed to affect the liver complicated by other grave injuries either of the abdomen or other regions. Seventy-four cases of complicated wounds proved fatal. An interesting case is given in detail of traumatic hepatic abscess which discharged through the bronchial tubes, the expectoration being mixed with bilious matter. The patient lived a month, and at the autopsy it was found that although it was thought at first that the lung was uninjured, yet the ball had passed through the lower lobe of the right lung and had grooved the convex surface of the liver.

It further is stated that jaundice was present in only a small proportion of cases of liver wounds.

Of recoveries from shot wounds of the liver 62 cases are recorded, in 37 instances there being wounds of other organs.

In a number of cases the hepatic lesion was demonstrated by the escape of bile or a portion of the liver tissue, in many cases the diagnosis was less conclusive. Of the 37 complicated cases which recovered, 18 were indubitable, and with 14 indubitable cases taken from the first series this important record gives 32 examples which bear close scrutiny of recoveries from bullet wounds of the liver.

Extract from Table IV, page 202, Volume II, 'North American Report of War.'

Shot wounds.	Cases.	Died.	Recovered.	Unknown.	Ratio of mortality.
Stomach . . .	79	60	19	...	75·9
Intestine . . .	653	484	118	51	80·3
Liver	173	108	62	3	63·5
Spleen	29	27	2	...	93·1
Pancreas . . .	5	4	1	...	80·0
Kidney . . .	78	51	26	1	66·2
Blood-vessels, omentum, and mesentery . . .	54	47	7	...	87·0
Suprarenal capsule . .	1	1	...	...	100·0

Table and Notes of Dr. Lediard's Case of Bullet Wound of the Liver.

Date.	Temp.		Pulse.		Resp.		Bowels.	Urine.	Remarks.
1885.	M.	E.	M.	E.	M.	E.			
Oct. 28	100·2°	—	—	—	—	—	—	—	Bullet extracted from right loin; deep collapse.
„ 29	—	101·5°							
„ 30	—	103	—	120	—	36	Cleared	Urine bilious	Epistaxis; jaundice.
„ 31	—	101	—	96	—	28	Open	—	Air discovered in right pleural cavity.
Nov. 1	102	100	92	100	32				
„ 2	101·4	99·8	100	100	28	—	Enema		
„ 3	100·6	100	108	104	38	40	—	—	Bit of shirt discharged from entrance wound.
„ 4	100	99·6	104	104	32	36	Enema	—	Passed a good day.
„ 5	101	101	96	100	32	32	—	—	Jaundice rather less; more shirt discharged.
„ 6	100·4	100·4	92	92	28	28	Enema	—	Free sanious discharge from posterior wound.
„ 7	100·8	100·8	88	92	26	28	—	Less bile	Discharge from posterior wound bilious.
„ 8	100·4	100·4	92	92	28	28	Enema	—	Bilious mucus discharged from loin.
„ 9	100	101·4	88	96	28	32	—	Urates	Less pain and greater freedom of movement.
„ 10	102·4	101·2	106	104	32	36	—	„	Bilious discharge continues; lung?
„ 11	102·6	102·8	104	96	32	32	Open	Bile	Pneumonia of portion of right lung.
„ 12	102	103	96	96	30	40	„	Trace of albumen	Tenacious expectoration.
„ 13	103	102·3	96	104	40	32	„	Urates, no bile	Sweating; fine crepitation.
„ 14	102·2	102·2	96	90	32	32	„	„	Entrance wound closing; tenacious sputa.
„ 15	99·4	101	88	84	32	32	„	No albumen	Profuse sweating.
„ 16	97·7	100·8	80	88	30	30	„	—	Less sputa discharged from loin; is somewhat orange coloured.
„ 17	99·2	102	84	88	28	28	„		
„ 18	99·2	101·6	88	96	26	28	„	—	Frothy mucous expectoration.
„ 19	99·6	102	96	92	28	28	—	—	Drowsy; dyspnœa on exertion.
„ 20	100	102	96	94	28	28	Open	—	Crepitation over right base; drowsy.
„ 21	99·8	101·4	92	92	26	26	„	—	Expectoration continues.
„ 22	99·6	102·3	100	100	28	28	—	—	Far more gummy expectoration.
„ 23	99·2	102·5	92	98	26	30	—	—	Profuse purulent expectoration.
„ 24	101·4	102·5	104	100	28	34	Enema	—	Dulness of right lung extensive; copious sputa.
„ 25	100·8	102 6	104	108	32	36	—	—	Air present in pleural cavity; bronchial fistula suspected.
„ 26	100·8	101 6	108	100	36	32	—	—	More than a pint of pus spat up during night.
„ 27	100·8	101·8	104	108	30	32	Enema	—	Less dyspnœa.

	29	101·4	103	100	100	30	32	—	—	Sputa 5 to 6 oz. during night.
"	30	99·8	101·8	104	100	28	28	Open	—	Tympanitic area persists; sputa copious.
Dec.	1	99·4	102	100	—	26	—	"	—	Constant cough and expectoration.
"	2	99·2	102	88	104	20	28	"	—	Sputa, ½ pint during night; air in chest.
"	3	99	101·1	100	108	24	28	"	—	Sputa, 7 to 8 oz. during night.
"	4	100·8	101	100	104	24	24	"		
"	5	97·6	100·4	96	116	22	28	"	—	Sputa diminished to 3 or 4 oz. during night.
"	6	98·4	100·4	100	100	28	24	"	—	Posterior wound discharging.
"	7	99	100	100	—	22	—	"	—	Sputa, ½ pint of pus and froth during night.
"	8	98	100·3	96	—	24	—	"	—	Sputa, sweet yellow pus, ½ pint in 24 hours.
"	9	98·8	100·7	96	—	24	—	"	—	Sat up for 35 minutes.
"	10	99·2	100·4	100	—	24	—	"	—	Sputa, 10 to 15 oz. in 24 hours.
"	11	100	100·2	104	—	24	—	"	No albumen	Sat up for 3 hours.
"	12	98·8	100	108	—	20	—	"	—	Expectoration less.
"	13	98·2	99·2	108	—	—	—	"	—	Posterior wound discharging less.
"	14	99·2	99	96	—	20	—	"	—	Sputa, 7 to 8 oz. in 24 hours.
"	15	99·6	103	100	—	—	—	"	—	Bilious vomiting from gastric disturbance.
"	16	99·8	100·2	100	—	20	—	—	—	Sickness ceased.
"	17	100·1	99·4	96	—	24	—	Open	—	Expectoration, 2 to 3 oz.
"	18	101·4	99·8	104	—	—	—	"	—	Posterior wound contracting.
"	19	98·8	99·8	—	—	—	—	"	—	Pus, 5 to 6 oz. in 24 hours.
"	20	99·4	99·2	92	—	—	—	—	—	Bilious vomiting; tongue white.
"	21	98·4	99·1	88	—	—	—	—	—	Slight bilious discharge from posterior wound.
"	22	98·5	99·4	88	—	—	—	—	—	Sputa declining daily.
"	23	98·4	99·8	88						
"	24	99·2	99·4							
"	25	98	100·4	92	—	—	—	—	—	Discharge from loin almost *nil*.
"	26	98	98·4	—	—	—	—	—	—	Pus and mucus from chest 1½ oz.; far less cough.
"	27	98·4	98·8							
"	28	97	98·6	80						
"	29	97·3	98·9	—	—	—	—	—	—	Sputa almost ceased.
"	30	98·2	98·6	—	—	—	—	—	—	Chest wall somewhat flattened down.
"	31	97	98·6							
1886.										
Jan.	1	97·7	98·2							
"	2	98·6	99	—	—	—	—	—	—	Chest contracted on injured side.
"	3	97·4	98·7	—	—	—	—	—	—	Is gaining colour.

to

III.—*A Case of Pulmonary Arterial Reflux.* By Sir Dyce Duckworth, M.D. *Read October* 14, 1887.

CASES in which the pulmonary artery is diseased so as to allow of reflux through its sigmoïd valves are so rarely met with that I propose to record the particulars of one which has come under my observation.

J. R. E., æt. 49, a bank porter, was admitted into John Ward, St. Bartholomew's Hospital, under my care on January 22, 1887. Five years before, he was discharged from the police, in which service he had been for twenty-one years, attaining the rank of sergeant. He had become unfit for duty owing to shortness of breath.

He was a dark-haired man, of large frame, but he had never been very strong. He gave a history of two attacks of pleurisy on each side of his chest since 1870, and of cough and increasing shortness of breath for the previous eight or nine years. He was under my care in March, 1884, and remained in John Ward for two months. At that time he suffered from pain between the shoulders, increased on exertion. He had had several attacks of gout, but no illnesses that could fairly be called rheumatic. His father was gouty, and died paralysed at the age of sixty. He had drunk rather too freely both of beer and rum. There was no history of syphilis. The notes taken during his first stay in hospital record that his complexion was dusky, and that he had a teasing cough. The chest was barrel-shaped. The heart's impulse was felt in the sixth space under the left nipple, free from thrill. Percussion-dulness extended from second left intercostal space to the apex-beat. At the apex was heard a natural first sound, and a faint diastolic murmur. A clear second sound was also heard here. Above the apex and over the whole præcordia a diastolic murmur was heard, loudest, it was noted, over the aortic area, and audible to the right as far as the nipple line. The pulse was jerky, smaller in right than left radial, 96 in the minute, with occasional omission of a beat.

The lungs gave signs of impaired resonance at the upper lobes, and some generally dispersed dry bronchitic sounds were audible. There was some mucous expectoration. The

legs were œdematous up to the knees. The urine, sp. gr. 1030, was void of albumen.

During his stay he spat on one occasion two ounces of dark blood mixed with mucus. I headed the board "Morbus cordis, aortic regurgitation, chronic bronchitis, and emphysema," adding, with a query, "aortic aneurism." Several symptoms led to this latter suspicion, especially the signs of obstruction in the chest, and the deep-seated pain. Later on, epigastric pulsation was noted. A fair amount of improvement ensued, and the man went out.

On November 21, 1885, he was readmitted, and came under the care of my colleague, Dr. Gee, in Luke Ward. He had caught a bad cold a month previously.

At this time he had orthopnœa, and his chest expanded with difficulty. He had no thoracic pain. The heart's apex was impalpable, and no cardiac dulness was detectible. A diastolic murmur was audible all over the præcordia, loudest over lower end of sternum. The first sound was natural. The pulse was very irregular, 50 in the minute, of fair volume, and not jerky. The urine was pale, acid, sp. gr. 1015, and contained a trace of albumen. His board was headed "Aortic regurgitation, winter cough, gout." He remained two weeks in hospital, and was discharged relieved.

On his third admission to my ward in January, 1887, he was very dropsical and bronchitic. His complexion was markedly dusky. The jugular veins were turgid, and he passed very little urine, acid, sp. gr. 1025, containing one sixth of albumen and no glucose. There was orthopnœa and much flatulent distension. The bowels were confined. The apex-beat of the heart was felt in the fifth space, half an inch inside the left nipple line. Very limited dulness on percussion. There was epigastric pulsation. Systolic apex murmur heard in axilla and behind. A diastolic murmur was audible at apex and base, loudest down the sternum. The second sound was particularly noticed to be defective in the pulmonary arterial area. The pulse was 78 in the minute, irregular in force and rhythm, small, and of increased tension. No collapsing or aortic reflux quality observed. Much pulmonary emphysema, abundant râles all over the chest; cough, with abundant muco-purulent expectoration. The liver dulness began at seventh right rib, but the viscus was not felt below the cartilages. Spleen not felt. Œdema of the loins present. The temperature remained throughout rather below normal.

But little improvement followed on treatment adapted to his general condition. Digitalis was hardly of any avail.

On January 25 the following note was made as to the heart-signs: A diastolic thrill at the apex. First sound heard at beginning but passing at once into a murmur which is audible in axilla and behind. Systolic murmur heard over ensiform cartilage. The pulmonary second sound is not heard. Diastolic murmur as before. Some pulsation of jugulars. An attack of gout occurred at this time in left foot and great toe-joint. Early in February signs of increasing cardiac dilatation appeared with œdema of the lungs. Very little urine was passed. Cough was troublesome with copious greenish purulent expectoration, void of blood. The pulse was a little over 100, and respirations 30 in the minute.

On February 16 the cardiac apex was found a little further out in fifth space. The diastolic murmur was less loud. Pulmonary second sound not heard. Jugulars fuller. Anasarca increasing. There supervened increasing cardiac debility and dropsy, with mental clouding, and death occurred on March 6.

At the necropsy the lungs were found emphysematous and œdematous. Pericardium natural. Heart very large with much dilatation, especially of right ventricle. The mitral and tricuspid orifices were dilated, the aortic valves natural. The pulmonary valves were two in number, one large one with much thickened edges, and one smaller with similarly thickened edges. Between the two was a vacant space showing some slight roughening at the site where a third valve should lie. Below this was a thin-walled aneurismal pouch, capacious enough to hold a large hazel nut. Septum of ventricles complete. The liver was "nutmeg." Spleen a little enlarged, void of infarcts. Kidneys hard, but otherwise apparently natural.

The heart is preserved in the hospital museum; the condition of the valves is shown in Plate III.

It is possible that there was congenital disease of the pulmonary sigmoid valves in this case. The appearances rather indicated the previous existence of an incomplete valve at the vacant part of the pulmonary ring. There had probably been regurgitation throughout life, without any symptoms manifesting themselves till the cardiac wall failed in its nutrition.

Judging by the light of the physical signs it seems hardly creditable that the diagnosis was not made with certainty.

DESCRIPTION OF PLATE III.

Sir Dyce Duckworth's Case of Diseased Pulmonary Arterial Valves.

Two valves only found: A. Smaller; B. Larger; both thickened greatly at the edges. At C remains of third valve with beaded roughening at the attachment. D. Aneurismal pouch.

a
b
c

Many discussions took place at the bedside about the case. The absence of a characteristic collapsing (aortic) pulse was again and again noted as evidence against the existence of aortic regurgitation, and several sphygmographic tracings were also confirmatory against this.

I do not hesitate now to say that the diagnosis of pulmonary arterial reflux ought to have been made. I have, however, a vivid recollection of making that diagnosis on one occasion, and of finding the case turn out post mortem to be one of aortic reflux with healthy pulmonary valves. I suppose there will often be hesitation in pronouncing with absolute certainty in these cases. They are extremely rare.* Aortic regurgitation is sometimes indicated by a murmur heard loudest in the area of the pulmonary artery. The condition of the pulse when the disease is fully developed will probably best assist in determining which set of sigmoid valves are involved.

* A case is described by Dr. Whitley in a woman, æt. 44, in the *Guy's Hosp. Reports* for 1857, p. 252, where disease of the pulmonary artery was suspected by Dr. Hermann Weber. Double bruits were heard over the region of the artery, and the pulmonic valves were found much diseased post mortem. The artery was greatly dilated above the valves. *Vide* Stokes on *Diseases of the Heart and Aorta*, Dublin, 1854, p. 163, for cases and for valuable commentaries suggesting great caution in establishing the diagnosis.

IV.—*A Case of Cephalhæmatoma with Extensive Ossification of the Cyst Wall.* By Frederick Treves. *Read October* 14, 1887.

In May, 1887, a boy, æt. 11, presenting a large and remarkable tumour of the head, came under my notice at the London Hospital.

The lad was well developed and enjoyed perfect health. There was no deformity of the body other than that already named.

The tumour was even and rounded and occupied the right side of the head. An examination of its base showed that it was strictly limited to the parietal bone. It reached the median line above and the lambdoid suture posteriorly, while in front it extended as far as a vertical line drawn upwards from the external auditory meatus. It occupied therefore the whole of the parietal bone with the exception of its most anterior part.

The tumour was covered by normal scalp and by an even growth of hair.

On examination it was found to be made up of two parts. The central portion was very soft and fluctuating, but the periphery assumed the features of a crater of bone.

This bony cap appeared to be attached to the skull as a limpet to a rock, only that the summit of the limpet shell was wanting and the soft central part could be felt through the gap that was made.

The cap or crater of bone came off from the skull along an even circular line. It arose gradually so that it was not possible to make out that at one definite spot the normal skull ended and the new bone began to take origin. The walls of the little crater sloped evenly towards the centre and varied in depth from one to two inches. The central margin or orifice of the crater was exceedingly well defined. It appeared as a gagged opening, the bony margins of which were abrupt, dentate, and sharply cut. The bone ended suddenly. The free edge was quite flat—as if cut with a punch—and was about two to three lines in thickness. So far as the examination

could extend it would appear that a distance equivalent to the height of the tumour intervened between the free margin of the bony cap and the dome of the skull.

The opening of the crater—measured across the curved surface of the tumour—had a diameter of about 4 inches; its true diameter would have been about 3 inches. This opening was occupied by a soft fluctuating swelling. The skin over it could be depressed, but not sufficiently for the vault of the skull to be very clearly made out. The sense of resistance given to the finger was such that there was little doubt but that the surface of the cranium formed the floor of the tumour. It was possible, however, to demonstrate that the crater of bone was formed from a tegmentum of bone of definite thickness, and that it was not a solid mass that presented an irregular hollow in its centre.

At one part of the margin of the crater there was a loose piece of bone—about the size of a sixpenny-piece—that gave one the impression that a projecting point at the margin had been detached. The soft central portion of the tumour was the seat of a faint pulsation, and after very long-continued pressure the size of the swelling was a little diminished. It was evident that there was some aperture in the skull, but it must have been very minute.

It was apparent that the tumour was, primarily at least, a sub-pericranial cephalhæmatoma a considerable portion of the wall of which had undergone ossification.

The following was the history given by the boy's mother. She had had twelve children, six of whom were older than the patient, and five younger. The patient was one of twins and was the first of the twins to be born. He was born by a head presentation. The labour was rapid and easy. All the previous and subsequent labours had been easy, and instruments had never been used. All the children were born free from deformity. The patient's head was quite normal at the time of birth. When the child was four months old he was accidentally dropped from his father's arms, and fell upon the right side of his head on the floor. A bump at once formed and has persisted ever since. It was at first quite soft but in the course of a few months it began to harden. It has grown as the boy has grown.

The patient has had excellent health. Has never had convulsions, and is bright and intelligent.

I have ventured to report this case because, so far as I can ascertain, little is known of the after-history of the

cephalhæmatoma of young subjects. And this case, moreover, presents certain features not met with in ordinary sub-pericranial blood-tumours.

The blood-tumour of newly-born children is caused by pressure upon the skull exercised during birth. The swelling is more commonly met with in the children of primiparæ, is more frequent in males than in females, and is most usually situated over the parietal bone, and notably over that of the right side. The condition is explained by the position of the head during labour—although the swelling has been met with in breech presentations—by the softness and vascularity of the parietal bone, and by the loose attachment of the pericranium. The connections of that membrane at the suture lines explain the strict limitation of the effusion to the one bone. Before the tumour has existed long, and generally within a week, certain changes take place at the extreme periphery of the swelling which finally result in the mass being encircled by an osseous ring or *bourrelet*. This bony circle occupies precisely the angle formed at the spot where the pericranium leaves the bone, and as that surface of the ring which looks towards the blood collection is perpendicular to the plane of the skull the *bourrelet* presents in transverse section a triangular outline. The osseous ring is easily separated from the subjacent bone, which then appears normal. Similar formations of bone are observed in rabbits subjected to experimental elevation of the pericranium. As the cephalhæmatoma subsides, the osseous circle disappears and in time leaves not a trace of its existence. In certain cases, more especially in those of old standing, a thin layer of bone forms beneath the separated pericranium, and a tumour so modified may crackle under the finger like tinsel.

It would appear that the new formation of bone will entirely disappear in time. I can find no museum specimen that demonstrates its persistence. As bones are so easily preserved one would expect to find examples of these rings in large pathological collections were the condition common.

Of cephalhæmatomata appearing through injury some months after birth less is known. I have seen several examples, but in no instance did a ring of bone form. In one case in a child twelve months of age a blood-tumour existed over the frontal bone. It was limited to one side of the bone, proving the persistence of the interfrontal suture line. It had been produced by injury inflicted six months previously. I incised it and so demonstrated its sub-pericranial character. No new

bone had formed, and the mass subsided without suppuration or adverse symptoms of any kind.

In the present case not only was the swelling due to an injury inflicted some months after birth, but an enormous mass of rigid bone has been produced which so far would appear likely to become a permanent addition to the skull.

Addendum April, 1888.

That the original lesion consisted mainly of an extravasation of blood would appear from the fact that the swelling was noticed immediately after the accident. At no time was the tumour observed to pulsate by the friends of the patient. The skull may have been, and probably was, fractured at the time of the accident, although the injury produced no brain symptoms and was regarded as trivial. It is evident now that there is a communication between the cranial cavity and the cavity of the tumour, and it is equally clear that the aperture is very minute. It is probable that this communication has been the cause of the persistence of the tumour. It is difficult to regard the tumour as a meningocele or swelling caused by a protrusion of the meninges since it is practically irreducible, has a very feeble pulsation, and there is no conspicuous fact in the history of the case to support the conception of a great outbursting of the membranes.

*** For another description of this case see Mr. Silcock's case of Traumatic Meningocele, reported elsewhere in this volume.

V.—*Case of Stricture of Bile-Duct.* By Sidney Phillips, M.D. *Read October* 28, 1887.

J. R., male, æt. 60, coffee-house keeper, came to me in the Out-patient Department at St. Mary's Hospital on October 28, 1886.

He complained of jaundice and much cutaneous irritation; these symptoms had been coming on gradually for three or four weeks, and for about the same time he had also suffered from pain in the epigastrium after eating and from relaxation of the bowels. The motions he described as "white like chalk."

The jaundice was well marked in both skin and conjunctivæ; the urine very dark coloured. The liver edge was felt two fingers' breadth below the margin of the thorax, and there was much tenderness about the epigastrium. The surface of the liver appeared a little irregular, but there was no distinct nodulation. The temperature was 99·2° F.

His *history* was that all his symptoms had come on gradually, and that he had never had any attack of colic, vomiting, or previous jaundice. He had been a very free drinker of spirits for thirty-two years, but for the last four years had been a teetotaller. For twenty-nine years he had had gout at times in his toes, knees, and ankles. He had never had a chancre or venereal disease of any sort.

He continued attendance as an out-patient till November 15, becoming more deeply jaundiced and much weaker and more emaciated.

The itching of the skin remained very severe, and his trunk and limbs became covered with purpuric blotches. Some raised papules of xanthelasma also appeared on the back, and these became stained by the purpura.

On Nov. 15 he became an in-patient. After this he continued to grow weaker; he suffered from pain in the epigastrium and vomiting after food, but there was never any hæmorrhage from stomach or bowel; his diarrhœa was very intractable, and at times he passed some membranous layers, which did not exhibit any organised structure under the microscope.

The liver remained enlarged throughout, and a hard

nodule was felt, which, although it did not fluctuate, was suspected and eventually proved to be the distended gall-bladder. The temperature was never above the normal.

He gradually sank, and died on February 9, 1887.

At the post-mortem examination by Dr Maguire, the liver was somewhat enlarged, and firm in structure and of greenish colour.

The gall-bladder was distended to the size of a very large pear; on exerting very considerable pressure a few drops of fluid could be squeezed out of it into the duodenum. A probe passed from the duodenum through the common bile-duct was arrested by a stricture of the duct just below its union with the cystic duct; eventually a bristle was passed through the stricture. The cystic and hepatic ducts were much dilated. The gall-bladder was full of clear, almost colourless limpid fluid.

There were no signs of constricting bands or perihepatitis in the neighbourhood of the ducts.

On dissection the mucous membrane of the duct was found a little thickened, but quite smooth, and nowhere ulcerated or adherent to the opposed mucous surface, and the stricture was due to a very tough fibrotic thickening of the duct-wall outside the mucous membrane; the duct was thus thickened and cord-like for about three quarters of an inch of its length, producing a stricture of the wall exactly resembling an old so-called cartilaginous stricture of the urethra.

At the posterior part of the lesser curvature of the stomach, 3 inches from the pylorus, was a small ulcer the size of a shilling, and an eighth of an inch in depth, but there was no inflammation around or thickening extending in any direction.

The kidneys were granular, but there were no alterations in other organs worthy of note.

Remarks.—In this case a fatal jaundice resulted from a stricture of the bile-duct arising without any obvious cause. Three similar cases have been recorded.

Mr. Holmes (*Trans. Path. Soc.*, 1860) records the case of a man on whom a post-mortem examination showed "the coats of the common hepatic duct much thickened, and the duct extremely contracted, but not quite impervious as a small probe would pass through it;" and he writes, "In default of any other probable way of accounting for ulceration of both cystic and hepatic ducts, while the ductus communis choledocus remained free from disease it is assumed this

must have resulted from the passage of gall-stones, notwithstanding the total absence of any history of pain in the region of the liver at any previous period or of any previous attack of jaundice."

In the *Transactions of the Pathological Society* for 1873 Dr. Moxon reported a case, his own description of which is: "The hepatic duct at the junction of the two divisions was swollen from the presence in it of a tough matter making a little soft knot of the size of an almond around and in its walls. The length of the stricture was one inch, and its cause simple connective tissue in the form of a scar, the state resembling remarkably that seen in ordinary simple stricture of the urethra." He writes: "The stricture is in the hepatic duct 2 inches above the cystic duct and gall-bladder, and no traces of gall-stones or signs of their former presence, neither were there any calculi in the hepatic ducts, so the case falls among the small group of unexplained simple strictures."

Dr. George Johnson (*Brit. Med. Journ.*, August, 1880) describes a third case of fatal jaundice where the ductus communis choledocus was, to use his own words, "obstructed by fibrous thickening of its coats, and the gall-bladder was distended to the size of a turkey's egg;" there were no evidences, either before or after death, of the existence of gall-stones, and Dr. Johnson concludes, "the exciting cause of the inflammatory process is not apparent."

In all these cases there existed a stricture in some part of the biliary passages, without any evidence of gall-stones, but cases of this nature seem sufficiently rare to render my own case worthy of record. It, with others, may be taken as contributing to establish the fact that stricture of the bile-duct may be set up, and produce an intractable jaundice, going on to a fatal termination without there being at any time during the history of the case any attack of colic or vomiting or other symptoms of the passage or impaction of biliary calculi, and without any evidence of them being found after death. The recognition of this fact may be of service in the diagnosis of the cause of obstinate obstructive jaundice.

Thus, in the case I have recordeded this evening the difficulty in diagnosis was very great; it at first seemed possible that the jaundice was due to a catarrh of the ducts, but as time went on, and it did not clear up, it became certain that there must be some other cause. Perihepatitis constricting the duct from without seemed improbable as there was no evidence of syphilis, and no paroxysmal attacks of local peritonitis and

no obstruction of the portal circulation. The correct diagnosis, therefore, remained unmade till after death.

It is possible that the recognition of presence of stricture of the bile-duct without symptoms of gall-stones may be useful not only in diagnosis, but also in the treatment of such cases; for seeing the success of cholo-cystotomy and allied surgical procedure, it might be possible by operation to give an exit to the obstructed bile behind the stricture, and so postpone possibly the fatal result.

At any rate, one immediate danger might be averted, viz. that of rupture of the over-distended gall-bladder, by opening it or introducing the aspirator.

I think, also, that the cases I have cited or recorded afford strong evidence that stricture of the biliary passages may be set up not only without any *symptoms* of gall-stones, but entirely independent of their existence.

In the first place, the absence of any symptoms of the passage or impaction of calculi, such as colic, vomiting, or their presence in the stools or in the biliary passages before or after death, affords a certain presumption against their ever having existed; and though it is no doubt possible that calculi may pass without symptoms, it seems exceedingly improbable that a stone so passing without symptoms should set up ulceration in its transit and subsequent stricture. A calculus so passing would be probably small and rounded, and would be exactly the one least likely to injure the bile-duct in its passage.

Again, in one case—Dr. Moxon's—the stricture was situate two inches above the junction of the cystic with the hepatic duct and therefore, in a position which a gall-stone was little likely to pass.

But the strongest evidence against the stricture being invariably due to biliary calculi, is that in all the cases to which I have referred, including my own, the stricture was formed by a fibrotic thickening of the outer coats of the duct, while the mucous membrane within was perfectly smooth, and showed no sign of ulceration or cicatrization. I cannot, therefore, but think that stricture in the wall of the bile-ducts may be set up by other causes than gall-stones; and this view is supported by its occasional occurrence in the newly-born fœtus, where no gall-stones can be supposed to have passed.

Frerichs appears to allude to such cases when he writes in his work on *Diseases of the Liver* (vol. ii, p. 461), "Sometimes constriction or obliteration may be produced by

cicatrization of ulcers and occasionally by inflammatory processes developed independently of any mechanical irritation by propagation from the intestine or in some other way."

As to what the cause of stricture of the bile-duct may be when not due to gall-stones, more cases require to be recorded before this can be determined.

In two of the reported cases there was gout or rheumatism, in two heavy spirit drinking. In my own case there was gout continued at intervals for a long period.

And it seems possible that a long-continued catarrh—gouty or otherwise—may eventually lead to fibrosis and contraction of the outer walls of the duct just as a long-continued gleet may lead to a stricture of the urethra.

Dr. Murchison, indeed, remarks that cases of gouty catarrh may become so inveterate as to resemble cases of cancer of the liver with obstructive jaundice. Possibly in these cases stricture may have been set up.

In conclusion, I will only restate the two points to which I have wished to draw attention in this paper.

First, That stricture of the duct may exist without any symptoms whatever of gall-stones.

Secondly, That it is probable that stricture of the duct may be set up from causes entirely unconnected with the existence of gall-stones.

VI.—*A Case of Acute Suppurative Peritonitis (Traumatic?): Laparotomy and Washing the Peritoneum: Recovery.* By Richard Barwell. *Read October 28, 1887.*

ALTHOUGH the operation of opening the abdomen with the one distinct aim of cleansing the peritoneum has for several years been recognised as probably the only means of dealing with certain forms of peritonitis, yet the recorded cases are so few that the history now to be related will probably prove of interest to this Society.

William B., æt. 42, a porter in Covent Garden Market, accustomed to drink a good deal of beer, was admitted under the care of Mr. Barwell into Robertson Ward, June 24, 1887.

On Saturday, June 18, he fell while carrying a load, and struck (besides his hand and forehead) the lower part of his abdomen on the left side. Although this gave him some pain, he did not think he was injured, and continued his work. He micturated about an hour afterwards, but does not know if the urine contained any blood.

On the afternoon of the day before his admission he was seized with a painful sensation as of "cramp inside," while stooping; he vomited and passed a little very dark-coloured urine; he was obliged to go to bed and lie with his legs drawn up. The abdomen swelled immediately after the pain had come on. He vomited whenever he took food, and had violent eructations. He passed only a very little urine with some difficulty, but without pain.

He was brought to the hospital about eleven in the morning, and was placed in a hot bath; while in it he passed what he thinks may have amounted to a wineglassful of urine.

I saw him a little after two on the same day. His face was somewhat pinched and anxious, pulse small and hard, 124, temp. 100·4°, skin dry, tongue somewhat coated, brown at the back, not markedly dry and somewhat tremulous. The man vomited almost immediately after taking any food, and occasionally without doing so. The abdomen was hardly at all tender, except in the left iliac region, but it was much swollen and very tympanitic quite down to the pubes. The

character of this tympanites was remarkable,—clearer and brighter in tone than is usual in cases of alvine flatulence. I observed also, that if the abdomen was tapped even gently with the finger in one place a vibratory thrill was communicated to the whole part. I passed a No. 12 catheter; no urine flowed even though pressed as far back as could with safety be done; but when it was withdrawn it was full of urine pretty deeply stained with blood. In spite of the somewhat slight constitutional symptoms it was clear, that the man had peritonitis, and the urinary conditions led me to think that this might possibly be due to a small intraperitoneal rupture of the bladder.

June 25.—The man had on three occasions passed about 10 oz. of urine, which at first was somewhat blood-stained; the last sample contained no blood, but a small quantity of albumen; sp. gr. 1022. The temperature had fallen to 89° at 6 A.M.: at the moment of my seeing him was 89·4°, pulse 130. The tongue and pulse were much as on the previous day; the abdomen was more distended, and had the same peculiar sort of tympanites. The case presented some points of difficulty. The bladder having resumed its functions the idea of a rupture of that organ could no longer be entertained; yet it was evident that acute peritonitis of a bad type was present, although the man's manner and condition was but little depressed and the expression hardly anxious. I determined after consultation with Mr. Sheild to open the abdomen, and that gentleman was kind enough to help me in the operation.

An incision about 3 inches long was carried through the linea alba, and after suppressing the very slight bleeding a small opening was made in the peritoneum. Immediately a quantity of gas escaped with considerable force, forming bubbles in a turbid, yellow, rather thick fluid. We verified that this gas did not escape from any adherent intestine, which might possibly have been punctured, and then I slit up the serous membrane to the whole extent of the external wound. I could not by the most careful examination detect rupture either of the bladder or of any other viscus. The peritoneum was somewhat thick, opaque, and yellowish in colour; down deep in the pelvis was a quantity of thick pus, there were no adhesions, but over one or two coils of the intestine spots of injection were observed. I passed a sponge into the pelvis, and drew it back completely covered with thick, flocculent pus. Three sponges were thus used in succession, and I then passed deeply in, a glass funnel with

smooth nozzle, and washed out the cavity with ten pints of warm distilled water (temp. 99°). This as it came away carried with it quantities of pus and flocculi. Sponging was again freely resorted to; then the lower end of the table supporting the man's pelvis was raised, and the upper part of the peritoneum also washed; only a very little pus and one or two flocculi came with the fluid, therefore not more than four pints were used. When the sponges, which were again employed, came out dry, the wound was united throughout its whole length by means of quill and of superficial sutures, and was covered with carbolic gauze and salicylic wool. The whole operation lasted an hour, including the administration of ether and the dressing.

June 26.—Patient slept at intervals during the night, but vomited frequently a brown fluid in which darker brown concreta floated; pulse rather fuller, tongue moist; temp., morning 99°, midday 96·8°; passed 38 oz. of urine. Complained of much thirst. Abdomen scarcely at all distended, not tympanitic, and tender only in immediate neighbourhood of wound. He had a small pillow under the knees, otherwise lay flat. Says that he feels quite well and wants to go home.

June 28.—The bowels acted four times during the night; afterwards the vomiting stopped; all bad symptoms much relieved.

July 6.—It does not appear necessary to follow daily notes further. On and after the 29th the man was out of danger; the rest was mere convalescence and recovery of strength. I have, however, to regret a want of understanding between myself and Mr. Hardy, my then house surgeon, whose care and assiduity were most praiseworthy. I thought he would remove the quills as a matter of course, while he waited for specific directions; they were as a fact retained for seventy-two hours, and this caused some superficial suppuration and gaping of the outer wound, but the union of all other parts save only the skin remained sound and perfect. The man, however, had to be kept in hospital longer than would otherwise have been the case. He left on July 30, and has since been seen quite well.

I am proud to claim my own hospital of Charing Cross as the birthplace of the operation, "opening the peritoneum for peritonitis," and my late highly respected colleague Mr. Hancock* as its originator. Mr. Treves†, claims, however, to

* Medical Society, *Lancet*, 1848. † *Med.-Chir. Trans.* (1883).

be the first surgeon who deliberately opened the abdomen for acute peritonitis. Mr. Lawson Tait* nevertheless records a case as early as 1883, and as I judge from the wording of that report, he did not expect to find other disease than peritoneal inflammation. Mr. Tait's case was one of chronic suppurative peritonitis, and Mr. Treves's case was secondarily acute, that is to say it was an acute attack consecutive to a chronic inflammation of about three months' standing. Dr. Buchanan's† celebrated case was one of acute adhesive peritonitis; it is quite true that he expected to find some obstruction of bowel; he cleaned and washed out the abdominal cavity, and his patient got well.

Certain other cases, such as enterorraphy,‡ or ovariotomy§ performed during acute peritonitis, need not more especially be mentioned here.

In the case just reported after the change in the urinary symptoms I did not expect to find rupture of any viscus. I operated solely on account of the peritonitis; the cause of which being obscure, I of course sought for any possible rupture which might have been caused by the blow. Moreover, the case was very acute, not supervening on any chronic inflammation. This is a point of some little importance, because, as is very well known, a peritoneum which has been chronically or previously inflamed is far less tender and susceptible than a membrane attacked *ab initio* by acute inflammation.

It is very difficult or impossible to say exactly when the peritonitis of my patient began; the first recognisable symptoms occurred on the Thursday afternoon; the operation took place the following Saturday. The temporary suppression or partial suppression of urine was probably the result of the inflammation. Therefore it is quite possible that a man apparently so little sensitive, so *hard*, if I may use a common expression, might have had a certain amount of inflammatory mischief before he became aware of it; but it must be remembered that the blow, presumably the starting-point of the disease, occurred only six days before his admission into hospital, and five days before he felt any but the momentary and immediate inconvenience.

It will probably have been noted that after completion of

* *Brit. Med. Journal*, vol. i, 1883, p. 304.
† *Lancet*, vol. i, 1871, p. 776.
‡ Michulicz, *Volkmann's Sammlung*, No. 262.
§ Nussbaum, *Deutsche Chirurgie*, No. 44, p. 28.

irrigating and sponging the peritoneum, the abdominal wound was sewn closely without any drainage. The circumstances that induced me to take this course were these: the suppuration had its seat and focus chiefly in the lowest part of the peritoneum, about those folds of the membrane which pass from the rectum to the bladder. Had my patient been a woman I might perhaps have cleansed the vagina and drained into that cavity; in the male sex, however, there is no possibility of draining the part of the peritoneum in question. But (as I said at the time) if gases formed afresh within the cavity, or if any appreciable amount of fluid were again collected, the lower end of the quill sutures could easily be removed, that part of the peritoneal union sundered, and escape allowed. In the meantime it seemed to me that I eliminated a certain element of danger by avoiding the retention within the peritoneal cavity of a foreign body which could not possibly act as a drain. May it be permitted me to go a little further and suppose a case in which the chief brunt of the malady falls on some other part of the peritoneum, for instance, on the part in front of the kidney? The fluid in the recumbent posture of the patient will certainly gravitate to the lowest part of the cavity, and will not be complacent enough to flow almost perpendicularly upward along a tube, and out of a wound a little below the umbilicus. If any fluid does find its way thus, it can only be the top layer of a liquid large enough in amount to somewhat distend the cavity. Any such distension could of course be at once detected, and the means of relieving it adopted.

Another point which may afford room for some dissent is the use of pure water for washing out the cavity, and the avoidance of any "germicide" solution. The reasons for this action are the rapid absorbent power of the peritoneum, its large extent, and its irritability. No solution either of carbolic acid, perchloride of mercury or thymol could be made strong enough to act as a germ destroyer, yet weak enough to be innocuous. Neither did boracic acid or boro-glyceride seem desirable because to be useful such solution would have to be saturated, and the salt is apt to separate out of such a fluid.

I believe that as experience of such cases, at present very limited, increases, these two points will become established:

1. That perfectly pure water is the safest wash for the peritoneum.

2. That in acute suppurative peritonitis it is better not to place a drainage-tube in an anterior abdominal wound unless the suppuration be circumscribed (local peritoneal abscess) or unless it have supervened on a chronic or subacute inflammation producing considerable fluid effusion.

VII.—*Case of Tubercular Peritonitis treated by Laparotomy and Washing.* By R. Lawford Knaggs, B.C. *Read October* 28, 1887.

E. N., æt. 16, a fairly-nourished girl, first presented herself on May 22, 1886, when she gave this history: The catamenia commenced at fourteen, and had been regular till four months ago, when they ceased. For the last three weeks the abdomen had been getting larger; for this she sought advice.

Examination showed that there was a collection of fluid in front of the intestines, and the dull area occupied the left lumbar, left iliac, the umbilical and hypogastric regions, so that the tumour was chiefly on the left side. She was sent into the Huddersfield Infirmary under Mr. Samuel Knaggs to be watched. At the end of a fortnight the abdomen had increased one inch in circumference; the temperature had run a normal course; there was no loss of flesh. The urine was healthy but small in quantity, and there was no sign of tuberculosis in the lungs. Vaginal examination gave no information of importance.

The diagnosis was thought to lie between ovarian or parovarian cyst and tubercular peritonitis. To settle the point 6 oz. of fluid were drawn off by the aspirator. The fluid was rather viscid, of a yellow colour, and a sp. gr. of 1027. It contained albumin and paralbumin (estimated according to the method given in a footnote in Galabin's *Diseases of Women*). The microscope showed leucocytes in quantity and a considerable number of the large granule-cells of Gluge. The diagnosis of ovarian cyst was definitely made, and after consultation it was decided to operate.

On July 7 the abdomen was opened under the spray. The uterus and ovaries were quite normal, and the intestines, mesentery, and parietal peritoneum (which was much thickened) were covered with myriads of pale pink, gelatinous-looking tubercles, as big as hemp seeds, thickly and universally distributed, and varying but little in appearance and size. The ascitic fluid was removed and the abdominal cavity thoroughly cleansed with many pints of warm water and the wound closed.

The patient made a good recovery, and immediately began

to put on flesh in a most remarkable manner, so that she was with difficulty recognised for the same girl. Her weight was 7 st. when she went out, but she must have gained considerably before she was weighed. On March 4, 1887, she was shown at the Leeds and West Riding Med.-Chir. Society and she then weighed 8 st. 4 lbs.

There had been no tendency to a reaccumulation of fluid, and the patient was on the eve of going out to service. When last seen, on October 10, 1887, she had been in service five months, but the work was too much for her and she got gradually weaker. The catamenia, which had reappeared in November, stopped again in July and had been followed by a continuous yellow discharge. She left her place in August and her health had since improved. There was no ascites nor any evidence of abdominal disease, but there was slight morning expectoration and prolonged expiration over the right apex, but no dulness or cough. Her weight was 7 st. 10 lbs., and she had evidently lost a good deal of flesh.

It is interesting to note the mistake in diagnosis that the examination of the fluid led to.

The fluid of a *parovarian cyst* has usually a sp. gr. below 1005 and contains a trace only of albumen.

Ovarian fluid has a sp. gr. of 1018 and upwards, contains albumen and paralbumin, and has certain microscopical characters of importance.

Ascitic fluid is supposed usually to have a sp. gr. of 1010 to 1015 and contains a considerable quantity of albumen.

In this case Drysdale's granular ovarian cells were not distinguished from leucocytes, and no cholesterin crystals were found, but the presence of the large granule masses and the high specific gravity of 1027, were considered to point strongly to the ovarian nature of the fluid.

The test for paralbumin, a substance the presence of which distinguishes ovarian from ascitic fluid, was held to give a positive result, but the writer has not sufficient confidence in his chemical skill to make him certain of the accuracy of the experiment.

The chief interest of this case is its bearing upon the treatment of chronic tubercular peritonitis.

The prognosis in this disease is so grave that any method that can produce a fair proportion of satisfactory results is worthy of consideration.

Bauer, in *Ziemssen's Cyclopædia*, regards the diagnosis as absolutely fatal.

Fagge speaks hopefully of the result of treatment in children, but even with Sir Spencer Wells's celebrated case to refer to, he takes a decidedly gloomy view of the issue in the adult.

In Sir Spencer Wells's case, which seems very similar to the one just narrated, the result of incision and removal of the fluid has been fairly tested by time, for the patient was alive and well twenty-two years after the operation, and had enjoyed good health the whole time.

In 1886 Dr. Naumann put on record* three cases of tubercular peritonitis of slow progress and attended with emaciation and considerable ascites which had been treated by laparotomy. "Of these three laparotomies only one ended in recovery." A fourth case in which the tubercular character was doubtful recovered rapidly.

A short time ago Dr. Kilner Clarke, of Huddersfield, operated successfully upon a similar case recorded at page 43 of the present volume.

What is wanted, however, are not statistics of the success of the operation but more knowledge about the effect of this treatment upon the constitutional disease.

On this point may be quoted Mr. Lawson Tait. Writing in the *Edinburgh Medical Journal* for May, 1886, he says:— "In cases of chronic disease associated with suppuration, or with the formation of those caseous masses which have given rise to the name of tubercular peritonitis, the treatment of opening the abdomen, completely clearing out all effusion which can be reached, and subsequently draining the cavity, has met with a perfectly uniform success in my hands, in its immediate results, and with a secondary success, that is to say complete cure of the disease, and the establishment of perfect health in at least 80 per cent. of the cases." He then relates a very remarkable case in which the ultimate result was as satisfactory as could be desired.

In the *Lancet* of October 16, 1886, a case is recorded by the writer in which the abdomen of a woman, æt. 43, was opened for intestinal obstruction, and the condition found to be caused by tubercular peritonitis. It is now two and a half years since the operation, and the patient has progressed most satisfactorily ever since. Though hardly in robust health, being the possessor of a constricted mitral valve, she considers herself better than she has been for years, and during the last

* *International Journal of Medical Science*, July, 1886, p. 233. *Centralbl. f. Chirurgie*, No. 2, 1886.

twelve or eighteen months has put on flesh so rapidly that her appearance is completely altered. Her strength has increased with her size, and she now performs all her own housework, and is capable of coming by rail to the town to market.

The operation, which was purely exploratory from beginning to end, attained its object—viz. the relief of the obstruction—in some way not clearly understood, but the improvement in the general health dates entirely from the laparotomy, and it has been steady and continuous ever since, although the patient has been in the same surroundings as before, and the medical treatment almost *nil*.

There was no ascites in this instance, and it is not very clear how much or how little the operation, apart from its giving relief to the obstruction, had to do with the restoration to health. It is not, however, difficult to conceive that benefit may accrue by the mere removal from the abdominal cavity of pathological products.

For the following important case the author is indebted to the kindness of Dr. Bantock.

"Dr. John Homans, of Boston, read a paper before the International Medical Congress at Washington in which he says: "'I have had one very remarkable case of cure of tubercular peritonitis and dropsy by laparotomy, the patient being now fat and healthy, three years after the operation. Fluid was discharged from the wound for about eight months, and there is now a discharge of about half a drachm a day from a short sinus.'"

Two other cases may perhaps be suitably mentioned. They are recorded by Dr. Bantock in the *Lancet*, March 19, 1887.

In one, a lady æt. 23 had two pints of flocculent fluid removed from a cavity shut off by adhesions from the peritoneum. "The disease appeared to be of a tubercular nature." The effect upon the general health was good.

The second case was a doubtful one. The peritoneum was studded with sago-like granulations, and the patient was much benefited by the removal of the fluid, which three months later had not reaccumulated.* Even should this case prove to be one of malignant disease (the diagnosis was "Probably malignant disease") it serves to illustrate the following fact quoted from Dr. Bantock's paper, "That whilst tapping in these

* When Dr. Bantock last heard of this patient, "she had regained her strength, and was looking very well and getting on well. There was still a little discharge from the sinus. All this would indicate that the disease was of tubercular nature."

cases is always followed by a rapid reaccumulation of the fluid, the operation of abdominal section has been followed," in Dr. Bantock's experience, "by complete immunity even in cases that have proved fatal in a few months from the progress of the initial disease."

The writer believes that it is in this fact that the explanation must be sought why incision and thorough cleansing of the peritoneum in tubercular peritonitis has been followed by such satisfactory results.

What effect the removal of the fluid has upon the tubercle is a question requiring to be answered. It may be that just as the hydatid perishes when the fluid is withdrawn from the cyst, so the peritoneal tubercles become altered and harmless when deprived of the albuminous fluid that bathes them, and is a consequence of their growth. The analogy is, however, only superficial, and would be quite inapplicable to those cases in which the fluid undergoes natural absorption as the disease progresses. A theory in better accord with the more recent development of science has been proposed by Dr. Cameron, of Huddersfield, to account for the benefit to the general health that has resulted in these cases.

Dr. Cameron suggests that the ascitic fluid must contain the toxic chemical products resulting from the growth and existence of the bacilli in the tubercles; that this poisonous fluid is absorbed, and exerts a deteriorating influence upon the tissues generally, whereby the general health is impaired, and the establishment of the disease in other organs favoured.

The complete evacuation of the fluid may by removing the accumulated poisonous products and preventing the decline of the general health, give the opportunity to the tissues to resist the inroads of the disease, and possibly to vanquish it.

The object of these remarks is, not to suggest the wholesale treatment of all cases of tubercular peritonitis by this somewhat heroic method, but to try to show that there are good grounds for believing that in certain cases more satisfactory and more rapid results may be obtained than by the methods generally employed.

The most suitable cases for its application would seem to be those in which ascites and a slow rate of progression are the chief clinical symptoms, and in which the disease has not yet attacked or seriously impaired other organs.

Where there is no ascitic fluid or pus to be removed, it is difficult to see on what grounds laparotomy could be defended,

though the result in the writer's case of intestinal obstruction must not be forgotten.

Lastly, it would be obviously out of place in those cases in which tubercular peritonitis supervenes in the course of advanced lung disease, or where it is associated with tubercular disease of other organs or serous membranes.

VIII.—*A Case of Tubercular Peritonitis cured by washing out the Abdominal Cavity, with a 1 per cent. solution of Carbolic Acid.* By Thomas Kilner Clarke, M.D. Introduced by the President. *Read October* 28, 1887.

TUBERCULAR peritonitis is a disease that hitherto has not been considered a hopeful one as far as treatment is concerned. The following case, therefore, with the completely successful result of the treatment adopted, will, I think, prove interesting to the members of the Society.

On May 10, 1887, Ann. S., æt. 13, living at Brighouse, came to the Huddersfield Infirmary as an out-patient. The following were the chief symptoms she complained of. Up to three weeks ago she was apparently quite well. Then she began to lose her appetite, and food of any kind was quite distasteful to her. Gradually she became weaker and lost flesh, while at the same time her mother noticed that her daughter was getting larger round the body. As the child continued to get worse and the swelling of the body to increase, her mother brought her to the Infirmary. Seeing that the case was serious, and diagnosing it to be one of tubercular peritonitis with rapidly increasing effusion, I advised her admission with a view to operation. Accordingly on the following day she was admitted.

The following was her condition on admission. The child was pale and thin, with a marked hectic flush on each cheek. Walking was for her a painful and a difficult task. Her temperature was 100·2° F., and pulse 120 beats per minute, respirations 20 per minute.

Lungs.—Anteriorly both lungs seemed healthy, neither betraying any even suspicious symptoms.

Posteriorly the conditions were these:—Right lung: There were no positive and definite abnormal signs, but enough to raise a suspicion of commencing apical mischief.

Left lung: Over the lower half of the left lung there was complete dulness, with entire absence of vocal and tactile fremitus. The breath-sounds were indistinct and distant, but there were no abnormal accompaniments.

Heart.—The heart was quite healthy.

Abdomen.—There was no enlargement of the liver or spleen. The abdomen was much distended and contained a large quantity of fluid.

Genito-urinary system seemed quite healthy. The urine was slightly acid, of specific gravity 1020, and contained no albumen, no blood, no casts, in short nothing abnormal.

Previous history (was as follows). Up to this present illness the patient seems to have enjoyed exceptionally good health. The mother says that when three years of age her child had "inflammation of the stomach," but no definite information could be got of this illness, from which she quite recovered.

Family history.—This is very good indeed. Her parents are both alive and in excellent health. She has two brothers and one sister, all of whom are well and strong. There is no history of phthisis or syphilis.

No special treatment was adopted between the time of the patient's admission into the Infirmary and the operation.

On May 16, five days after admission, I proceeded to operate as follows. The A. C. E. anæsthetic mixture being administered, an incision 2 inches long was made in the median line of the abdomen rather nearer the umbilicus than the pubes. The skin and subcutaneous tissues being dissected aside, the peritoneum was reached and opened just sufficiently to admit two fingers. It was found to be closely studded all over with small hemispherical bodies, of a pearly appearance, and about the size of boiled tapioca grains. The intestines, which were pushed up towards the diaphragm, were felt to be thickened and studded with these pearly bodies in like manner to the peritoneum. By means of a funnel with rubber tubing attached the peritoneal cavity was thoroughly washed out with about two and a half quarts of a warm 1 per cent. solution of carbolic acid. Lastly, without any sponging out of the peritoneal cavity, the wound was closed in the ordinary manner.

The after-progress of the case was in every way satisfactory. The patient bore the operation well, and was contentedly laughing half an hour after it was over. After the first six hours, during which there was a little pain, she suffered no more pain. As will be seen from the subjoined table the temperature never rose above 101° F., reached only the night of operation, and the two succeeding nights. In short the patient made uninterrupted progress towards recovery, never having had a really bad symptom.

Date	Temp.		Pulse.		Resp.		Urine.			
	M.	E.	M.	E.	M.	E.	Daily quantity in cc.	Sp. gr.	React.	Alb.
11th	...	100·2°	...	120	...	20				
12th	97·6	100·6	120	...	24	24				
16th (oper.)	...	101	...	120	...	32	675	1020	Acid	
17th	94·4	101	108	108	20	24	520	1020	„	
18th	99	100·8	112	100	32	24				
19th	99	99·4	104	106	22	...	600	1024	„	
20th	98	98·7	100	...	20	...	550	1030	„	
21st	98·4	99								
22nd	96·6	97·8								
23rd	97	98								Never any.
24th	99·4	98·6	...	...	...	...	765	1025	„	
25th	97·2	98								
26th	98·4	100								
27th	98	99·2	...	...	...	...	750	1029	„	
28th	97·8	98·4								
29th	98·2	97·8								
30th	98·2	97·6	...	...	...	...	950	1020	„	
31st	98	99·6								
June 1st	98	99	...	...	...	...	1000	1030	„	
2nd	98	98·2								
3rd	98									

The stitches were removed on the seventh day after operation, and the wound found to be quite healed up. She was fitted with a belt, and then allowed to get up on June 1, the fifteenth day after operation. On June 5 she was sent from the Infirmary to the Convalescent Home at Meltham. Her weight was then 5 st. 2 lbs., a loss of 2 lbs., since her admission. She stayed three weeks at the Convalescent Home, and while there gained in health and strength and 9 lbs. in weight.

On July 6 she again presented herself among my out-patients, so altered in appearance that for a moment I did not recognise her, a plump, rosy-cheeked girl, the very picture and embodiment of health. She said she felt perfectly well and was able to walk comfortably a long distance. There was no trace of fluid in the abdomen, and both lungs were now quite healthy.

IX.—*Enormous Prostate: Stricture requiring urethrotomy: Vesical Calculi, free and encysted: Urine passed for years by catheter, then supra-pubic operation and now by supra-pubic tube, rendering catheterism unnecessary: Patient in excellent health.* By Sir H. Thompson. *Read November* 11, 1887.

A GENTLEMAN æt. 56, in good health, consulted me on July 14, 1877. He had had an attack of retention of urine eight months before, since which time he had found it necessary to pass a catheter twice daily, withdrawing rather more than ten ounces on each occasion, and obtaining an interval of five hours afterwards. His case was one of the ordinary examples of enlarged prostate of elderly men.

I saw no more of him until nearly eight years later, namely on April 21, 1885. He was now sixty-four years of age. I learned that of late the bladder had become extremely irritable. He now passed all or nearly all his urine by catheter, requiring it every hour and a half, night and day. There was much pain when the bladder was emptied, and sometimes a tinge of blood appeared. The urine contained much muco-pus and was very offensive. On sounding him a calculus of moderate size was detected and I advised lithotrity.

April 24, 1885.—Mr. Moss gave ether, and Dr. Hickman, of Dorset Square was present. On examining the urethra I found a stricture at 4½ inches from the orifice, and that the utmost size it admitted was No. 9. The catheter generally used was No. 7. I at once forcibly dilated the narrow portion by passing a series of conical metal dilators up to No. 13, and then proceeded to crush and remove, at one sitting, a phosphatic calculus of which the débris weighed 142 grains. He made a fair recovery, but a good deal of muco-pus always appeared in the urine, which was controlled by washing out the bladder daily, and this he learned to do for himself. In May he could walk and drive without pain, and at this time required to pass his catheter about every three hours. He left town at the latter part of the month and I saw him no more until August, when he complained of greatly increased pain and frequency in passing water, compelling him to use the catheter fifteen or sixteen times in the

twenty-four hours. I sounded him but there was no calculous matter in the bladder; the stricture, however, had partially reappeared and required to be gently dilated. He still passed a No. 7 habitually, which was the largest he could comfortably employ.

A little improvement followed this; but he came to me again in November, as bad as ever, and naturally disappointed at the result of the operation. He passes his catheter not less than sixteen times in the twenty-four hours, and there is great suffering after it, temporary relief resulting for only half an hour or so, and then the pain of distention reappears and soon renders the catheter necessary. He takes morphia continually as the only mode of obtaining ease. Sounding failed to discover any calculus in the bladder.

After a consultation with Dr. George Johnson, it was decided that I should perform "digital exploration of the bladder," by opening the urethra in the perinæum, and I did so under ether on November 4, 1885. I found a very large prostate rendering entry of the tip of my finger into the neck of the bladder difficult. Still it sufficed to discover on the right side, close to the neck, a sac in which I could feel the grating of calculi. This I opened with the scalpel, and extracted six calculi, each about the size of a very large pea, pyramidal in form, but with regular facets and angles from the effects of packing in the cavity. I removed them with small forceps, one at a time, until I could feel no more in the sac, and satisfied myself that there was no calculus in the bladder. I now took advantage of the ether to divide his stricture by internal urethrotomy, as it was fully an inch and a half anterior to the perineal opening ,which was placed as far back as possible, and did so sufficiently to pass No. 15 (English size) metal dilator with ease. A tube was tied in by the perineal wound and retained ten days, all the urine passing through it.

He gradually recovered, the wound having rapidly healed, and he now passed the catheter with great ease about every two and a half hours; but the urine was often thick, pain always more or less present, and much granular prosphatic deposit continued, requiring for its removal daily washing out of the bladder with various injections. He was compelled to continue the free use of morphia, and although slightly better it was quite evident that he would probably before long become worse again, and that the removal of the calculi had not much improved the condition of the bladder, lying in a sac as

they had done and therefore outside the vesical cavity, thus influencing it only to a small extent.

During the spring of 1886 the symptoms gradually reappeared, although he was able to spend some time at the seaside and benefited his general health somewhat in doing so. But it was necessary to teach a member of his family to inject morphia hypodermically in order to palliate his sufferings by a daily dose or two in addition to suppositories. Notwithstanding this treatment he was now obliged to use his catheter on the average twenty times in the twenty-four hours, causing his sleep to be very imperfect. In these circumstances I came to the conclusion that his only chance lay in submitting to the formation of a permanent opening above the pubes, and I explained this to him and to his friends, but they were naturally anxious to avoid further operations after his past experience and declined my proposal for the present.

At the end of April he came up to town with symptoms still more severe and requested me to do anything I thought best in his condition.

On April 29, 1886, in the presence of Mr. G. Rice Ord, of Clapham, assisted by my friend Mr. Buckston Browne, I performed the supra-pubic section as for stone, and opened the bladder freely. I found the prostate as large as a small cocoa-nut, nearly filling the pelvic cavity to the level of the lower brim, and very irregular in form. Introducing the finger, the greater part of the cavity was felt to be encrusted with rough phosphatic matter, apparently adhering to a dense fibrinous layer like an exudation, which was closely attached to the mucous membrane and could be peeled off by using the finger-nail carefully, and this I accomplished after some time and trouble, removing a considerable quantity. There was no calculus in the interior in any other form. A large tube was placed in the lower angle of the wound, the upper part of which was closed by two deeply placed stitches.

Much relief followed immediately; since all catheterism was dispensed with and he could sleep tranquilly for some hours at a time, the urine passing freely by tube. He continued to improve every way during some three or four weeks. It was now time to provide for the permanent removal of the urine by some practicable method, and my aim was to adapt a tube which should give exit to all of it so as to prevent its escape by the side or in any way that would inconvenience him and transmit it direct into an ordinary urinal to be worn attached to the leg in the usual manner.

After two or three trials I got a silver plate made by Mr. Weiss, adapted to fit the surface just above the pubes, the margin of the plate being provided with holes so that it could be retained in its place by tapes and be attached securely round the body like a suspensory bandage. This plate was perforated a little below the centre by a short silver tube projecting from the anterior surface of the plate about three

Fig. 1.

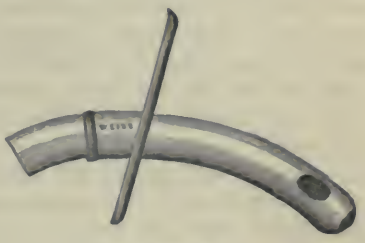


Fig. 2.

quarters of an inch, sufficiently large to contain a silk web gum-elastic tube, No. 20 in size, English scale, and curving downwards so as to guide the flexible tube in that direction. The flexible tube was 4 inches long, and was fixed into an ordinary urinal attached to the leg. After a few trials and some adjustment this plan answered admirably. The flexible tube, although firmly fixed, could easily be removed, the inner surface of the silver tube having a spiral groove like a screw. The former was therefore taken out daily and cleaned, when the bladder was washed also (*vide* Figs. 1 and 2).

His sufferings now disappeared, the urine became almost clear, and he was able gradually to discontinue the use of opium. He went to Brighton in the summer and remained there during the autumn, taking exercise and enjoying life once more. He then left and spent the winter in the Channel Islands, gave up all nursing, and managed the daily duty of twice cleansing the tube by himself assisted by his wife. He writes me that he "is able to walk two miles and to be out an hour at a time. . . . The urine good in colour and clear; it passes through the tube at night and does not interfere with sleep." I may add that he has never required a catheter since, for the urine all flows safely, easily, and painlessly into the urinal with which he is constantly provided.

I heard no more until April, 1887, when he walked into my rooms looking the picture of health, and with a cheerful

and happy manner, remarkably contrasting with my previous recollection of him. He said that he was in the habit of removing his tube once daily, washing it out, and replacing it immediately, and that was all the attention his case required.

But about the beginning of June he wrote me from Hastings that owing to the narrowing of the opening he had difficulty in introducing the tube, that the free exit of the urine was interfered with, and that he was suffering inconvenience and pain in consequence. I advised him to come up, which he did on the 7th. I found on examination that in using undue force in order to pass the tube into the bladder he had made a kind of *cul de-sac*, into which its end was apt to lodge, when, of course, the outflow of the urine was more or less impeded.

June 8.—Being placed under ether, I enlarged the opening, rendering the channel complete, and tied in a catheter, maintaining it and the tube in place for three or four days, in order to ensure continuity of the passage. The catheter being removed the tube remained, and the old system was re-established. He left on June 21 for the country, enjoying the same freedom from trouble as heretofore. On Jan. 31, 1888, he called on me again, in order to report that he was as well as ever, not having passed a catheter for a year and three quarters, and that the tube had continued to work without any difficulty since the adjustment last made.

I will add that in my experience this case is unique for its combination of varied serious organic affections of the bladder, prostate, and urethra, occurring in one individual, all requiring operation, and the result being conspicuously successful.

It may be remembered, perhaps, that I advocated a similar method of affording relief in the very worst cases of prostatic disease so long ago as January, 1869, when I employed the supra-pubic puncture in University College Hospital in order to relieve an extreme case of constantly recurring catheterism in an elderly prostatic patient, by inserting a tube to give issue to the urine, as a permanent channel, effecting that object satisfactorily; and I repeated the proceeding with more or less success in four other cases. I brought the proposal before the notice of the profession for the first time in a lecture given at the Hospital in 1874, which appeared in the *Lancet*, January 2, 1875, and subsequently in the next edition of my work on the prostate.

In none of these cases did I do more than puncture the bladder above the pubes, thinking it would suffice to make a

small opening for the tube to occupy, and not laying open the bladder and exploring the cavity, as I did in the case now related. My present familiarity with the modern supra-pubic operation, however, and my very strong confidence in its safety and value, led me to adopt it in this case; and I believe that this proceeding will frequently offer a more excellent mode of relieving these terrible cases, hitherto always miserably and painfully fatal at the stage described, than the ordinary puncture I first resorted to, although this was to a certain extent useful. The draining of the bladder ensured by the supra-pubic operation is so free and complete, and the tube for transmitting the urine subsequently is so large and efficient compared with that I formerly employed, while the facility for washing out adequately is increased, that great comfort as well as prolonged life will, I am certain, be ensured by employing the method here pursued for some exceptionally formidable developments of the prostate and bladder. But the chief value of an extended opening for a very advanced case of chronic phosphatic deposit consists in enabling the surgeon to remove that tough dense coating often found in such instances, which I have termed "fibrinous," resembling somewhat as it does in appearance a croupal exudation, although it is in reality different, being a product of very slow formation. Unless it be removed, the phosphatic deposit inevitably continues, being only partially dislodged by solvent injections, the lithotrite and the aspirator. Excellent examples of it with the incrustation attached may be seen in the Hunterian Museum affecting the salient portions and rugæ of the bladder, the intervals between these being mostly free from the deposit.

I may add that I have now performed the modern supra-pubic operation twenty-three times, and in every case for affections of the most formidable kind, at ages extremely advanced, and in constitutions long oppressed by chronic disease. Among these I have met with two deaths only, one in an aged individual whose kidneys were far advanced in degeneration, with expanded pelvis and ureters, the result of old-standing calculous disease, and one in a largely-developed example of vesical tumour. The risk of this operation is therefore very inconsiderable, while the cases now referred to are so grave that were an operation for their relief much more formidable than it is, their condition would, in my opinion, warrant its employment, as the last and only chance of prolonging life and obtaining relief from terrible suffering.

X.—*On Supra-pubic Prostatectomy, with three Cases in which the operation was successfully performed for Chronic Prostatic Hypertrophy.* By A. F. McGill. *Read November* 11, 1887.

THE operation which I bring before your notice this evening, and which may conveniently be designated supra-pubic prostatectomy, consists in opening the bladder above the pubes and removing that portion of a hypertrophied prostate, which prevents the passage of urine from the bladder into the urethral canal. The first part of the operation consists in opening the bladder very much after the manner recommended by Sir Henry Thompson for supra-pubic lithotomy; an experience of eleven cases of the last-named operation has, however, led me to think, 1st, that it is advisable to leave a silver catheter in the bladder to act as a guide, and 2ndly, to secure the edges of the bladder wound with nipped forceps before allowing its contained fluid to escape. This being done, the interior of the bladder is examined with the finger and the next step of the operation proceeded with. The bag being removed from the rectum and the catheter from the bladder, we excise all that part of the enlarged prostate that impedes the outflow of urine. In two of my cases the hypertrophy was in the form of a collar surrounding the urethra and projecting into the bladder, in the third case the middle lobe only was enlarged and projected from the floor of the urethra and from the adjacent portion of the bladder-wall. The growth has been removed partly by tearing with forceps, and partly by cutting with scissors, or with a strong cutting instrument, which I have devised for the purpose. This is a tedious and not very elegant proceeding; it will, if the operation prove a useful one, probably be improved. The piecemeal removal which I have practised has, however, been thus far satisfactory.

Case 1.—E. W., æt. 53, admitted into the Leeds Infirmary, March 15, 1887. He has for the last five years suffered form bladder symptoms; at first he had difficulty in passing water and much pain on micturition. He was sounded for stone with

a negative result. He shortly after suffered from incontinence and was obliged to wear a urinal. Three years ago he noticed blood in the urine; this has recurred at irregular intervals, being often brought on by any extra exertion. For the last seven months he has been unable to pass any urine whatever without the aid of a catheter. He has suffered from a constant desire to empty the bladder, and states that he has passed a catheter for himself every two hours, day and night, during the whole of that time. On examination, the urine had a sp. gr. of 1014, was acid, contained a large quantity of mucus and a trace of albumen. The prostate through the rectum felt slightly enlarged. On passing a sound the bladder was nearly empty, and contracted firmly on the instrument; no stone could be felt; on injecting with a few ounces of boracic-acid solution and again sounding, the presence of stone was easily demonstrated. The bladder was washed out twice daily with boracic-acid solution till March 24, on which date I opened the bladder above the pubes. On introducing the finger six uric-acid calculi were felt, and removed with a scoop; they weighed collectively 174 grains. After the removal of the calculi the interior of the bladder was examined, and the prostate, much enlarged, was felt surrounding the urethra like a collar. The portion of the gland projecting into the bladder was the size of a large walnut and the orifice of the urethra could be felt at its centre. This tumour was the obvious cause of the unusual symptoms which the case presented. I endeavoured to pass the wire of an écraseur round the growth, but with only partial success. A small portion was removed, but the great mass remained untouched. I then seized the growth with large clamp forceps, such as are used in ovariotomy, and partly by tearing and partly by scissors, removed all the projecting portion in small pieces. When the growth was removed, I was able to pass my fore-finger as far as the first joint into the prostatic urethra; there was considerable hæmorrhage, but this was, to a great extent, arrested by the injection of a hot weak solution of perchloride of mercury. A large tube was introduced into the bladder through the wound, and the upper part of the incision was closed by three sutures. The after-progress of the case was most satisfactory, the temperature was 101° on the second night, but after that never reached 100°. The tube was removed on the third day. He passed a small quantity of urine by the urethra on the eighteenth day, and after that the wound rapidly closed. He left the hospital on April 30, with the

wound entirely healed and passing urine without difficulty and without the aid of a catheter in a perfectly natural manner.

Case 2.—T. T., æt. 65, admitted into the Leeds Infirmary April 5, 1887. Has had the usual symptoms of prostatic enlargement for two years, but feeling otherwise in good health he never sought medical aid until a fortnight before admission, when his urine became thick and offensive, and micturition very frequent and painful. He continued in this condition for three days; he was then seen by a surgeon, who passed a silver catheter and drew off between 2 and 3 pints of stinking urine. This was the first occasion on which a catheter had been passed. The instrument was used two or three times on successive days, but as the patient did not improve he was sent to Leeds. On admission, he looked ill and anxious, he passed a little urine every three or four hours, night and day; the bladder was not distended, and the prostate, on rectal examination, appeared to be slightly enlarged. On passing a catheter an obstruction could be felt at the neck of the bladder, but the instrument passed without difficulty. The urine was strongly alkaline, sp. gr. 1016; it contained a little albumen; there was a copious deposit of pus and a few crystals of triple phosphate. His bladder was washed out daily with a weak solution of permanganate of potash for three weeks without benefit. The patient's general condition much deteriorated, and the urine became more fœtid and thick with blood. On April 25, I opened the bladder above the pubes. On introducing the finger it was felt that there was little or no general hypertrophy of the prostate, but that the middle lobe projected upwards from the floor of the urethra, blocking it up and projecting into the bladder for half an inch behind the urethral orifice. The projecting portion was removed partly by scissors and partly by tearing with vulsellum forceps. The portions removed were altogether not larger than a small bean. When this had been done the forefinger could be passed into the prostatic urethra. There was but little bleeding; the bladder was washed out with warm boracic solution, a tube was introduced and three sutures were inserted into the abdominal wall in the upper part of the incision, above the point where the tube protruded. After the operation the patient's condition immediately improved; the temperature was 100° on the evening of the second and third days, but did not subsequently reach 99°. The tube was removed on the third day, he first passed urine by the urethra on the fourteenth day, and on May 23—twenty-

seventh day—the wound was entirely healed, and all urine passed without the aid of a catheter by the natural passage. On May 28, he left the hospital feeling quite well. He was seen on September 10, and his condition was still in every respect satisfactory.

Case 3.—J. D., æt. 61, admitted into the Leeds Infirmary July 25, 1887. Has had symptoms of prostatic enlargement for six years; three years ago had an attack of retention of urine and was relieved by the passage of a silver catheter; after daily catheterisation for a fortnight he regained the power of micturition and had no further treatment. Two years ago he was advised to and instructed how to pass a soft catheter for himself. He was not, however, able to do this except on one occasion. He has gradually got worse, but has never had a second attack of complete retention. For some months past the urine has been thick and offensive; on admission he passed urine from fourteen to sixteen times in the twenty-four hours, and he suffered much from pain in the hypogastrium. The urine had a specific gravity of 1020, was strongly ammoniacal and putrid; it contained a small quantity of albumen, and upon standing deposited one third of its bulk of pus. It was impossible to pass a soft or ordinary silver catheter, but with some little difficulty a long prostatic catheter could be introduced into the bladder. This being done, after the patient had emptied his bladder to the best of his ability, the catheter withdrew 6½ oz. of residual urine. On rectal examination the prostate felt much enlarged. The patient's general condition was bad, he vomited all his food, and had constant diarrhœa. The case was obviously an unfavorable one for operation, but seemingly this was the only course likely to relieve.

On July 29, the bladder was opened in the usual manner, the prostate was found to be much enlarged and to project round the urethra into the bladder, the orifice of the urethra being felt about the centre of the projecting mass. The ureters were much dilated, and admitted with ease the tip of the forefinger. I removed all the projecting growth, partly by means of strong cutting forceps and partly by tearing with Thompson's forceps for bladder tumours. There was considerable but not excessive hæmorrhage, which stopped on injection with a hot antiseptic solution. When the removal was completed the finger could be passed without difficulty into the urethra, and a No. 10 catheter, which before would

not reach, now glided into the bladder without a hitch. A large tube was placed through the wound, which was partially closed by sutures. The next day all urgent symptoms had disappeared, the tube was removed on the third day, and he passed a small quantity of urine by the urethra involuntarily on the ninth day. As the urine still contained some pus, the bladder was washed out daily with boracic solution; the condition of the urine improved under the treatment, the quantity passed gradually increased, and he left the hospital on September 10 with the supra-pubic opening closed, and passing urine naturally. When he left, the urine was almost free from albumen, but still contained a little pus, derived, no doubt, from the kidneys or ureters.

This last case is to my mind a very interesting one; the patient was in grave danger from uræmia at the time of the operation, and the dilated condition of the ureters makes it seem extremely probable that his kidneys are in a diseased condition. Notwithstanding this, his improvement after operation was most marked, and he appears to have obtained a new lease of life.

It will be seen from the cases narrated above that I have only performed this operation in cases of great urgency. Excluding the first case, where the removal of the calculi was the primary object of operative interference, the other two cases have been done for those urgent symptoms which not frequently supervene in those suffering from enlarged prostate. It is true that many cases are kept in comparative comfort for years by the systematic use of the catheter, but in a certain not very small proportion of cases the treatment breaks down, and owing to the extreme irritability of the bladder, life becomes unbearable, and death becomes imminent. In these cases it has been customary to drain the bladder and put it at rest by means of a perinæal incision. Though this method of treatment has been often successful I am inclined to think that supra-pubic drainage is more effectual than perinæal drainage. In June, 1886, a patient was under my care suffering from fracture of the pelvis and ruptured urethra. When first seen, urine was extensively extravasated into the perinæum; an incision was consequently made, and it was found that the urethra was torn through and completely detached from the bladder. It being impossible to find the opening into the bladder, I opened that viscus above the pubes, and passed a tube into the perinæum through

the urethra; I also left a tube through the supra-pubic wound. The result was that nearly all the urine escaped above the pubes, while the remainder, certainly not a sixth part of the whole, passed through the perinæum. When after two or three days both tubes were removed, the urine came through the upper opening entirely, and continued to do so for several weeks. In this case it was evident that drainage was more effectual when applied above, than below the pubic arch.

On February 3rd of this year I operated on a man æt. 68, who was suffering from the symptoms of prostatic breakdown already detailed. I opened the bladder supra-pubically and allowed free drainage. No attempt was made to remove any portion of the prostate. The patient immediately improved in health, the wound was not allowed to close, and he still passes a female catheter three or four times daily through the fistula which leads to the bladder. All acute symptoms have long disappeared, and he is able to do his work with comfort.

But the operation which I have described aims not only at removing acute symptoms but at affording permanent relief. In my cases this relief has been obtained and continued in two of them for five months. If an increased and more prolonged experience shows us that the removal of a portion of the prostate enables patients to dispense with the use of the catheter we shall have gained a step in the treatment of this condition, and not improbably the operation will in some cases be resorted to before any acute symptoms supervene.

XI.—*Case of Tumour (Myoma) of the Female Bladder removed by the Galvano-Cautery through a Dilated Urethra combined with Supra-pubic Incision: Illustrating also the Value of the Electric Light for Purposes of Exploration of the Bladder.* By R. A. Gibbons, M.D., and R. W. Parker. *Read November 25, 1887.*

ADA S., æt. 18, was admitted into the Grosvenor Hospital for Women and Children in October, 1886, with cystalgia and incontinence of urine of some five months' duration.

Previous history.—She was country-bred from healthy parents, and until within about six months of her illness had always lived in the country; latterly she had been living in London. She was now somewhat pale and feeling weak. She was well-built, of dark complexion, and had always enjoyed good health until the present illness began. She appeared to have had two small, probably congenital dermoid, tumours removed from behind the ears. There was no history of syphilis and no reason to suspect it. A paternal great-uncle is said to have died of "cancer" and a maternal great-uncle is said to be suffering from "cancer of the bowels."

Present illness.—During a short visit home it was noticed (by her mother) that the girl was unable to retain her water for any length of time, and that she suffered pain when trying to do so. She had medical advice, being treated for "stone in the bladder," but without any relief. The symptoms gradually increased in severity, and pain was always felt on making any attempt to repress the flow of urine; this pain was not increased by running up and downstairs or other exercise.

On admission the girl was found to have lost all control over the bladder so that the urine dribbled away from her unconsciously. She complained of a dull aching pain, which was referred to the perinæum. There was also a malodorous leucorrhœal discharge. The urine was found to have a specific gravity of 1030, it was acid, of a pale straw colour, and contained a copious purulent deposit. Microscopically, there was an abundance of pus-cells, with tesselated epithelial cells, crystals of uric acid, and oxalate of lime. There was no blood on

this occasion, but subsequent examinations gave results similar to the above with the occasional presence of blood-corpuscles.

The patient was carefully examined under an anæsthetic; no stone could be detected in the bladder, but a smooth-topped, hemispherical growth, rather lobulated in outline was felt. On bimanual examination this growth appeared to be about the size of a pigeon's egg, and was situated on the floor and adjoining part of the left wall of the bladder. It could be moved about with some freedom, showing absence of infiltration of adjoining parts.

On a subsequent occasion the girl was again anæsthetised, and, permission having been obtained, the urethra was rapidly dilated with a view to a digital exploration of the bladder. This confirmed the diagnosis of tumour, and, moreover, permitted of a more accurate localisation. The tumour was found to be broadly sessile, the top slightly overhanging the broad pedicle by which it was attached; it was long in an antero-posterior direction, of a firm consistence, and quite smooth on its surface. This examination caused a small amount of hæmorrhage.

All arrangements having been completed a week later, the tumour was removed. We have to acknowledge the valuable help rendered us by our colleagues, Dr. Steavenson and Mr. Butler-Smythe.

The patient being anæsthetised, and the vagina and rectum inflated with india-rubber bags, the bladder was opened above the pubis, after having been distended with warm boric solution. The edges of the incision being held apart by retractors, a small incandescent lamp was introduced into the bladder, its interior examined, and the outline and general surface appearances of the tumour more clearly made out. The tumour was bright red in colour, it was seen to be sharply defined, and there was complete absence of infiltration of the vesico-vaginal wall; the rest of the bladder appeared quite normal.

A wire écraseur connected with a cautery battery was applied to the tumour, the loop of platinum wire being passed into the bladder through the urethra; it was fixed round the base of the tumour, and then slowly tightened. This proceeding, however, occupied some time, and was not accomplished without considerable difficulty, nor until a colleague raised the tumour in the floor of the bladder, by pressing upon the vesico-vaginal wall; with another finger he held the wire-loop *in situ* on one side of the tumour, while the operator adjusted it on the other side. After the tumour was surrounded,

the loop of wire was tightened and made to constrict the pedicle as much as possible, when the galvanic current was turned on, and the tumour slowly cut through. This was effected in about five minutes, the current being twice completely stopped to make sure that hæmorrhage was not taking place. A small flat cautery was afterwards applied to the seat of the tumour, and a small uneven projection burnt off. There was no subsequent hæmorrhage.

The bladder was then thoroughly washed out with boric solution; a drainage-tube, extending into the bladder, was put into the lower angle of the supra-pubic opening; the remaining part of the bladder wound was then carefully sutured with carbolised silk, the recti muscles were next brought together by a separate set of sutures, and the incision through the skin was stitched last.

For the purpose of keeping the bed dry, a long india-rubber tube was placed in the bladder *per urethram*, which conducted the urine into a vessel beneath the bed. A half grain of morphia suppository was introduced into the rectum.

Anæsthesia was admirably kept up by Mr. Edgar Willett, so that no shock from the operation appeared to be felt.

It will be needless to follow the patient day by day; suffice it to say that she made an uninterrupted recovery, and never had a bad symptom from beginning to the end. The supra-pubic incision healed *per primam intentionem*, except at the spot occupied by the drainage-tube, which was not finally removed until the thirty-second day after the operation. For twenty-three days she felt no retaining power in the bladder. On the twenty-third day some power of holding water returned and gradually increased. On the forty-second day she could hold water for three hours at a time. On her discharge from the hospital sixty-six days after operation she had complete control over the bladder.

On the day before her discharge the following note was made:—The urine is alkaline and contains a little ropy muco-pus. An examination of the vesico-vaginal wall, at the spot corresponding with the seat of the tumour, detected nothing abnormal; no infiltration or sign of recurrent growth could be felt, but on bimanual examination, on making pressure upon the bladder, some uneasiness was experienced. The girl's general condition is greatly improved; she feels strong and well, but experiences a slight pain in the bladder from time to time. She has complete control over the urine. When heard of several months later she remained well. Control over the

urine was perfect, there was no pain about the bladder or perinæum, and no sign of any recurrence.

Examination of the tumour after removal:—The tumour, on section, was firm yet soft in consistence, of a stone grey colour with vascular points interspersed; the cut surfaces tended to assume a rather concave aspect. A number of small yellowish spots of (?) fatty degeneration, such as are seen in cancers, was observable. It was the size of a large walnut, somewhat flattened, and measured $4\frac{1}{2}$ inches in circumference; the section of the pedicle by which it was attached was a long oval in shape, measuring $1\frac{1}{4} \times \frac{3}{8}$ inches.

Microscopically, the tumour was found to consist of compact, interlacing fasciculi, which in places are formed of spindle-cells, in others apparently of involuntary muscle-fibre, the nuclei of the cells in the last-named parts being very long and rod-like (Plate IV). At one spot near the base of attachment a piece of mucous membrane remains connected with the growth, but for the most part this mucous membrane has been removed from the surface of the new growth by ulceration, the ulcerated surfaces being very vascular and formed of granulation tissue. The portion of mucous membrane remaining is thrown into shallow folds and is abundantly infiltrated with leucocytes. There is no definite line of demarcation between the mucous membrane and the subjacent growth.

The tumour must be regarded as a myoma of unstriped muscle-fibre, and the spindle-celled portions as the younger parts of the growth. In this view of the nature of the growth we are supported by our friend, Mr. S. G. Shattock, who was kind enough to make a detailed examination of the slides with us.

Remarks on the Case.

The following points seem worthy of consideration:

1. The symptoms.
2. The method of operating.
3. The suturing of the bladder.

1. The earliest symptom was slight pain, as of weight, in the perinæum and about the neck of the bladder. This was by no means severe and was not complained of for several weeks after its very gradual commencement. The pain was shortly followed by loss of control over the bladder, at first partial and subsequently complete; when the urine began to dribble away involuntarily the pain ceased.

At no time during the course of the disease was there any large amount of blood in the urine. In this particular, therefore, the case differs widely from what is usual in the majority of cases of bladder tumour. Sir Henry Thompson, in his work on *Tumours of the Bladder*, says "the earliest sign is mostly hæmorrhage. . . . But in cases of a malignant type pain and frequency in passing water generally precede the appearance of blood, sometimes for a considerable period of time." The total duration of symptoms in the present case was less than six months. It is just possible, therefore, that Sir Henry's statement respecting hæmorrhage would have been borne out had not the tumour been detected early and eradicated. In Sir Henry's cases the average duration of symptoms is stated to have been three years previous to his being consulted.

2. The method of operating. There are distinct advantages in the combination of supra-pubic cystotomy and rapid dilatation of the female urethra, the chief being that a minimum of dilatation suffices while the local disease can be seen as well as felt and can be dealt with more accurately through a supra-pubic opening than in any other way. Dilatation is chiefly valuable as a means of exploring and arriving at a sure diagnosis; if carried too far permanent incontinence of urine may result. To avoid such a risk alone, therefore, the supra-pubic opening is valuable. Besides this, however, it permits the tumour and the interior of the bladder to be examined by the eye as well as with the finger. In this case a small incandescent electric light was used, and answered admirably; every part of the bladder could be seen and the exact position of the tumour precisely determined.

The supra-pubic opening, especially in conjunction with the electric light, facilitates operative manœuvres, and, as in the present case, allows the base from which the tumour grows to be examined after the tumour has been removed, and such applications to be directly made to it as seem indicated by the circumstances.

Especially in cases of malignant disease it will help to insure a more complete removal of the growth, and destruction of the proximal portion of the pedicle. In other regions of the body, when dealing with malignant disease, the surgeon cuts wide of the growth. It seems reasonable to hope that an application of the same practice, when dealing with bladder tumours, will give a better chance of cure and certainly lessen the danger of recurrence. A supra-pubic

DESCRIPTION OF PLATE IV.

Dr. Gibbons' and Mr. Parker's Case of Myomatous Tumour of the Bladder.

FIG. 1.—Appearances seen under the microscope in horizontal section. Interlacing fasciculi of involuntary muscle-fibre, the nuclei being very long and rod-like.

FIG. 2.—Vertical section. The nuclei of the fibres as seen in cross section.

Fig 1

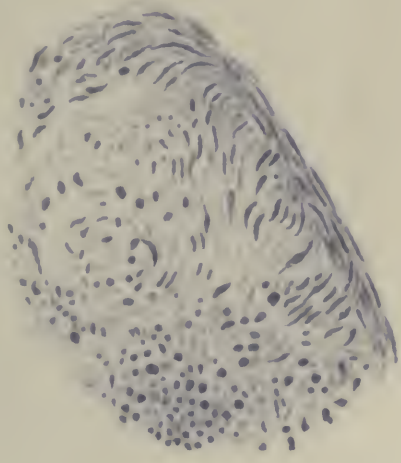


Fig 2

incision offers advantages over every other in this respect, and when combined with the use of the electric light and the electric cautery there is no reason why complete extirpation should not be thoroughly practicable. In the mere matter of hæmorrhage also this combination will be found useful; if local, a pair of spring forceps could be applied; if general, oozing from a large surface, a suitable application of the cautery can be made.

Lastly, we would draw attention to what we consider the advantages of the galvano-écraseur over the evulsion operation with forceps. We believe a more complete removal of the growth is possible, and that there is less danger of tearing or injuring the bladder wall, and that the operation is less likely to be followed by hæmorrhage and subsequent cystitis from decomposing blood-clot.

3. The incision into the bladder was carefully sutured; it healed without a bad symptom. This appears to confirm the view advocated by one of us* that the bladder should be carefully sutured after supra-pubic cystotomy in all cases in which the bladder walls are found healthy. It has been well said that careful closure of a wound is an essential part of success in so-called "antiseptic surgery." Certain it is that there would be no primary union after amputations, abdominal and other operations, if the edges of the incised tissues were not carefully brought together, however antiseptic the wound might be kept.

* "Calculus in a Child removed by Supra-pubic Cystotomy, followed by Primary Union," *Lancet*, July 3rd, 1886.

XII.—*On the Congenital Absence of an Upper Lateral Incisor Tooth as a Forerunner of Harelip and Cleft Palate. With Cases.* By R. Clement Lucas, B.S. *Read November* 25, 1887.

THE tendency of deformities to repeat themselves in succeeding generations, and even to exaggerate their defects, renders an early recognition of their presence of some professional importance. The tenacity with which a deformity once developed reasserts itself, though the blood be generation after generation reinforced from sources free from any such tendency, is one of the most interesting facts in heredity. In the *Guy's Hospital Reports* for 1880—1881 I have related the history of a family where out of eighty descendants of a woman who had supernumerary fingers and toes no less than twenty-four or 30 per cent. were similarly affected. Several cases have more recently been traced and published in the *British Medical Journal*. When a large number of reliable cases are collected it is probable some general rule may be deduced as to the relative frequency of its occurrence in males and females, and the reason a particular child should be selected to carry on the deformity may possibly be discovered. A good instance showing the hereditary tendency to harelip and cleft palate appeared among my out-patients at Guy's Hospital on August 4, 1887. A woman who had been successfully operated upon for cleft palate and harelip subsequently married and gave birth to six children. The second child and the sixth presented the same deformity as the mother, the others escaping. The object of this paper is not, however, to discuss the repetition of a pronounced deformity but to point out the danger of a deformity only partially developed and likely to pass unobserved. It has been noticed, and a case is figured in Bryant's *Surgery*, that a slight gap or mark on the upper lip opposite the fissure between the incisor bone and maxilla may be a forerunner of complete harelip. I wish to point out (what I do not think has hitherto been described) that a congenital absence of an upper lateral incisor may foretell the probability of cleft palate and harelip in a succeeding generation.

I have three observations on this point. In two, the absence of the lateral incisor was observed in the mother, in the third the defect was in the father. It will, of course, occur to everyone that nothing is more likely than that an incisor tooth should have decayed and have been extracted, but I have been most careful to exclude this fallacy. Both the women were certain that the particular tooth had never appeared, and I can vouch for the correctness of the observation in the man's case also.

Case 1. *Congenital absence of the left lateral incisor tooth transmitted to the next generation.*—A. B., a gentleman of considerable mental development, was noticed as a boy to have no upper lateral incisor tooth on the left side. It is certain that no incisor tooth of the second dentition was ever extracted. He has an only child, a daughter, who presents the same defect on the same side. This case shows that the absence of the tooth is to be regarded in the light of a malformation which may be transmitted, and that the transmission may be through the opposite sex.

Case 2. *Absence of the right upper lateral incisor tooth in the mother associated with harelip on the same side in her infant.*—E. R., æt. 25, brought her infant child among my out-patients at the Evelina Hospital for Children in 1883 suffering from harelip on the right side. She had been married seven years and this was her fifth child. The mother has three sisters and no defect has before been noticed in any of her relatives. There was an interval of a year and eight months between this child and her last, and she had continued to suckle until she fell pregnant again. The mother's upper lip is perfectly normal. There is no notch or scar upon it, but her right upper lateral incisor tooth is absent. She is positive that no tooth was ever extracted in this situation and was aware that she had a front tooth short of the proper number. The other teeth are well formed. The child has an inguinal hernia on each side and an umbilical one, but was born at full time. It would seem that the exhaustion of the mother by repeated pregnancies and prolonged suckling was a factor in determining the appearance of the deformity.

Case 3. *Absence of the left upper lateral incisor tooth in the mother, associated with harelip and cleft palate in the infant.*—M. S., æt. 23, brought her first child to see me in

April, 1877, suffering from harelip and cleft palate. The mother was one of a large family none of whom had shown any deformity. A sister and an aunt died of consumption. The mother was a pale, delicate-looking woman. She had been married about eighteen months, and the infant, a girl, was her first child. She had had no miscarriage. There was no notch on her lip, but her left upper lateral incisor tooth was absent. She was positive that no tooth had ever been extracted from the front of her mouth, though she had lost one or two molars. She knew of no deformity in any member of her husband's family.

Since my observations were first directed to this point I have examined a great many mothers whose children had deformities about the mouth, but these three cases are all I have been able to collect in which the defect could be traced to an upper lateral incisor tooth. They are, however, sufficient for the purpose. They distinctly show that there was an arrest of development in the parent, which became transmitted or exaggerated in the offspring. It is not to be supposed that every child of such a parent, or even a large proportion of the offspring, would suffer, but a study of deformities assures me that such defect once appearing would almost certainly re-assert itself in some future generation. It is seldom that one has an opportunity in hospital practice of examining the father, but it is possible, if I had pursued the subject on the male side, I might have been able to collect other instances, since I have shown there may be a cross inheritance. These observations have extended over a period of ten years, and the cases found are few, but the association of these defects is too remarkable for them to be unrelated, and I believe the deduction to be irrefragable, viz. that *the absence of a lateral upper incisor tooth resulting from an arrest of development is to be regarded as a malformation closely related to harelip and cleft palate, and capable of transmitting each or both of these deformities to a succeeding generation.*

XIII.—*On a Case of Acute Enlargement of the Thyroid Gland in a Child.* By Thomas Barlow, M.D. *Read December* 9, 1887.

On August 5 last, I saw, with my friend Dr. McCaskie, a little boy whom he desired me to look after, during his absence from town.

The boy was 3 years old, of previous good health, the first child of young and healthy parents, and, so far as I could judge, he had healthy surroundings. Dr. McCaskie was attending him for a slight attack of erythema nodosum of both legs, which had been accompanied by so little constitutional disturbance that the day before I saw him, the child had been taken out into the park in his perambulator. On August 5, he had complained of some pain in the neck, and was a little feverish, and it was for this reason that I was asked to see him.

The child was rather sparely built, but otherwise well developed. In bed he lay on either side, was quiet when left alone, but whimpered directly he was moved. When raised into the sitting posture it was evident that the child had pain referred to his neck—he looked straight in front of him, held his head quite stiff, and could not be induced to look round. There was a little swelling in the middle line and on both sides at a level slightly below that of the larynx. When the child was induced to swallow, this swelling rose during the act of swallowing. This fact, as well as the shape of the prominence, showed that it was an enlargement of the thyroid gland. The skin over it, was free and not at all reddened; there was no œdema and no distension of veins, nor was there any undue local heat. The lymphatic glands of the neck and the parotid and submaxillary glands were not enlarged.

The child was pale in the face, he had a little thin, nasal catarrh, but his tonsils and pharynx seemed natural. He cried in rather a feeble way, but his voice was not at all hoarse. Nothing abnormal was found in the chest or in the rest of the body, except the bluish-purple slight elevations on the shins, the vestiges of the erythema nodosum. His axillary temperature was 101° F. He was ordered to continue the saline mixture which he was taking, and a cotton-wool compress was applied round his neck.

Next day, August 6, the swelling had increased a little in the left lobe, but the discomfort was not great if he was left alone. There was some difficulty in getting him to take food, —he would only take very small quantities at a time. The nasal catarrh continued. The morning temperature was 100°, the evening temperature 102°. He was ordered a purgative, to be followed by half-grain doses of quinine every four hours, and a compress of moist spongiopiline to be applied to his neck and changed at intervals.

On the 7th, the afternoon temperature was 100°, the evening 102°. The swelling had increased; it was most marked on the left side. The nasal catarrh was still present. He was more difficult to feed, would only take teaspoonfuls at a time, but there was no choking and no regurgitation through the nostrils. There was also no real dyspnœa. The cry was rather feeble and high pitched, but not in the least hoarse. His urine contained pale lithates, but no albumen.

On the 8th, the temperature was 103° in the evening. The swelling had increased somewhat, but no fresh symptoms appeared.

On the 9th, the enlargement of the neck had extended downwards. There was now quite a columnar swelling from the larynx to the upper margin of the sternum. The skin was shiny but not red. There was no fluctuation or local œdema, and it was easy to perceive, by both sight and touch, that although the whole of the thyroid was involved, it was the left lobe which was most enlarged.

The child was very difficult to feed. He had slept badly and looked exceedingly pale and ill. His voice was still feeble, but there was no retraction of the chest walls and no stridor. His slight nasal catarrh continued, that is to say, although he did not sneeze there was always a little clear, non-offensive, watery discharge escaping from the nostrils. He was free from any joint or other fresh symptoms, but there were still the vestiges of the erythema patches on the shins. His forenoon temperature was over 101°.

I felt certain there was no suppuration, but I began to be really anxious and to fear that if the swelling did not soon subside some incision of the deep fascia or other surgical measure might be necessary. I therefore asked Sir James Paget to be good enough to see the child with me, and he entirely agreed that the swelling was an acute inflammatory one of the thyroid gland but that there was no reason to suspect any suppuration. He had never seen such a case in

his previous experience. He suggested that, with a view to relieve tension, we should first apply a leech over the swelling in the middle line and note its result, and also that we should continue the quinine. That was accordingly done and with very great benefit indeed. Only a single leech was applied, but it drew a considerable amount of blood. The child was evidently more comfortable afterwards; he swallowed better, his evening temperature was 100°, and he slept fairly.

The highest temperature on the 10th was 99°, and after this it was not above normal. As far as could be judged, the swelling was a little lessened, and the boy was vastly more comfortable; he swallowed better, his voice was louder, and his urine was quite natural.

During the next five days the swelling gradually lessened. The only points of importance were, first, the continuance of the slight nasal catarrh; second, that the temperature became subnormal in the evening, and that on two nights he became rather collapsed and required a little stimulant; and third, that his pallor increased. He was ordered some raw-meat juice, in addition to pounded fish or chicken, and subsequently some iron. During my enforced absence from town, my colleague Dr. Money was kind enough to see him three times. On the 16th Dr. Money still found a very slight enlargement of the thyroid present, but, as before, rather more in the left lobe than elsewhere.

He was taken to Folkestone on the 20th, and returned on September 10, when I saw him again, and found his neck natural in every respect, and his colour and general nutrition good. I confess that I was much relieved, for I thought it just possible that such a condition might lead to atrophy of the thyroid and myxœdema.

Dr. McCaskie has told me that since that time the boy's health has been excellent, but it will be important to note his further development.

Remarks.—It is clear, for the reasons which I have mentioned, viz. the form and position of the tumour, and the fact that it ascended during deglutition, that this case was one of enlargement of the thyroid gland, and as the severe symptoms culminated in about four days, and the total duration of the swelling was probably little more than a fortnight, it may fairly be called one of acute enlargement of the thyroid, and a condition quite apart from goitre properly so called. As Sir James Paget had never seen such a case, and as Dr.

Semon, though familiar with the condition as recorded in literature, informs me he has never had an example under his own observation, I am right, I think, in considering it a very rare disease in this country. What the intimate nature of the enlargement was, and what its etiology, must remain, I think, matters of speculation.

I may briefly mention some points which I have learnt from friends and books bearing on the case in question:

My colleague Dr. Poore informs me that some time ago he had a case of a youth, æt. 20, the subject of congenital syphilis, who had ozæna and an enlargement of the thyroid, which the youth stated had occurred suddenly, and further that he had experienced this sudden enlargement on previous occasions. The ozæna was cured and the thyroid subsided, and has not increased again in size. The temperature was not taken, but Dr. Poore thinks his patient was not febrile, and, moreover, he was not ill enough to remain away from his work.

Dr. Poore had also a case in a medical student, of acute enlargement of the thyroid associated with a severe attack of hospital sore-throat.

My colleague Dr. Money has informed me of a case of a young lady, who has had repeated attacks of acute and sub-acute rheumatism, with heart disease and erythema papulatum and erythema marginatum, and who when convalescing from one attack woke in the morning with a sense of discomfort in the throat. This was found to be accompanied by a distinct enlargement of the thyroid, pressure on which caused pain and revealed some induration. The temperature was slightly raised, but there was no other abnormal sign. The tenderness, discomfort and slight pyrexia disappeared in two days, but there was a little undue prominence of the thyroid for a week, and, Dr. Money thought, a little undue hardness for another week. In this case menstruation had occurred two weeks previously, and was repeated two weeks subsequently at the proper date.

I pass now to a brief *résumé* of what I have been able to learn from medical literature.

Lücke, in *Pitha and Billroth's Surgery*, gives a chapter on "Acute Inflammation of the Thyroid," in which he divides the varieties found into idiopathic, traumatic, and metastatic. The idiopathic form, which he says is extremely rare, occurs by preference in young people about puberty. The etiology is very obscure, but the cases seem frequently to be associated with exposure to severe changes of temperature.

The symptoms, besides the local swelling, are pyrexia, moderate dysphagia, pain on movement and pressure, some dyspnœa, and in the later stages some enlargement of the veins of the neck and cyanosis. These cases end either in resolution, suppuration, or gangrene.

The duration of the cases which resolve varies between two to three days and many weeks. The traumatic variety usually suppurates. The metastatic form follows or accompanies typhus, pyæmia and the puerperal state, and usually suppurates. Of this suppurative form I may mention that I saw an example some years ago under the care of my friend Mr. Frank Roberts, which occurred in the course of a severe attack of erysipelas in a child.

The French writers on military surgery have recorded many *epidemics* of acute enlargement of the thyroid occurring in garrisons, and Viry and Richard, who reported on the Belfort epidemic in 1877, maintain that the disease has no relation to ordinary goitre, and that it properly belongs to the acute specifics. The resemblance to mumps appears to have struck several of the French writers, and I confess that resemblance to this disease continually recurred to my mind in watching my case. The military cases are reported in so meagre a fashion in regard to clinical detail that they do not help us much. Many of the cases seem to have lasted about nineteen days and taken about a month to convalesce.

There have been some extremely interesting cases published during the last few years bearing on the association of acute enlargement of the thyroid with rheumatism.

Mollière, of, Lyons was the first to record in 1873 a case of acute thyroiditis supervening on acute rheumatism when all the joints had ceased to be painful. The course of the temperature, he says, was similar during the thyroid affection to that of the arthritic attack.

Vulpian had a case in 1877 of acute slightly febrile enlargement of the thyroid following immediately on arthritis of fingers and generalised pains.

Raymond also has had two cases of acute enlargement of thyroid with slight fever accompanying multiple arthritis.*

It is interesting to observe that in these French rheumatic cases, as well as in Dr. Money's case, the symptoms to which

* For reference to these French cases vide *Gaz. Méd. de Paris*, Sept. 10, 1885, p. 448. There is also a summary of the French cases in the thesis of Mons. E. Zoulovitch, entitled *De la Thyroïdite aigue rheumatismale*, Paris, 1885.

the thyroid enlargement gave rise were not very severe, the constitutional disturbance slight, and their duration was not greater than forty-eight hours, although slight enlargement of the gland might continue for a few days.

Finally, I must mention that two cases of acute enlargement of the thyroid have been recorded as occurring in association with ague. Both rapidly subsided under strong doses of quinine. One of these is recorded by Zezas, of Berne, the other by Dr. A. H. Smith, an American physician.

In which group should my case be placed? It was not epidemic because no other member of the household took it. It was not malarial because there was no enlargement of the spleen or other sign of ague. No doubt the immediately preceding erythema nodosum suggests a relation to rheumatism, but it ought to be considered that there was no other rheumatic manifestation whatever, *e. g.* no morbus cordis, no arthritis, &c. Further, the thyroid affection seems to have been much more severe, and to have given rise to more severe constitutional disturbance than obtained in the undoubtedly rheumatic cases.

On the whole, I am inclined to place the case provisionally in Lücke's first group, viz. as one of the idiopathic set, and to connect its etiology with the exposure to cold when the child was barely recovered from the attack of erythema nodosum, which ailment, though insignificant in its local manifestations, is often followed by much anæmia and debility.

XIV.—*Case of Hydatid Cyst of Left Lobe of Liver: Radical Cure by Operation.* By Sidney Coupland, M.D. *Read December* 9, 1887.

THE case here related is remarkable from the fact of the difficulty which surrounded its diagnosis, and from the comparatively early stage at which it shows that a hydatid cyst in the liver may be radically extirpated. It is not intended to advocate such a measure in every case of non-suppurating hydatid, which may mostly be effectively dealt with by simpler means. But at any rate it demonstrates the ease and harmlessness of the more radical procedure, and is, moreover, an illustration of the value of an exploratory incision in obscure abdominal affections.

Walter S., æt. 17, a tall, rather pallid, spare and somewhat effeminate youth, was admitted into Hertford Ward of the Middlesex Hospital on January 22, 1887. He complained of weakness which had gradually increased so that he was obliged to give up his work, that of French polishing. He had been ailing for two years, and had suffered considerably from constipation, whilst for the past three months he had noticed a small "lump in the stomach," not painful, and said that since then he had become much weaker.

He was one of a family of seven children, three of whom were dead, including a brother who had died from diabetes, and a sister from consumption. His father, who had been mentally deranged, was also dead, but the surviving members enjoyed good health.

The lad himself had always been well up to two years ago. He was very reserved and listless, and nothing more definite could be elicited of his ailment than the foregoing statement. It should, perhaps, be added that there was no evidence of syphilis, either congenital or acquired, in the case.

The pulse was soft, regular, compressible. The temperature normal. Nothing abnormal in the thoracic physical signs. The tongue was thinly coated; appetite fair; bowels confined; no vomiting and no jaundice.

The abdomen was not distended, its walls were firm and resisting. In the epigastrium, just to the left of the middle line, one inch below the tip of xiphoid, there projected a small, nodular swelling, the size of a Barcelona nut. This felt very

hard and was slightly tender, but only occasionally painful. When it was firmly pressed the patient had a sense of nausea. It was obviously beneath the abdominal wall, and not adherent to it, whilst the remarkable degree to which it descended with inspiration pointed in favour of its connection with the liver rather than with the stomach. Moreover, the area of hepatic dulness, which was not abnormal in size, involved the region in which the nodule was situated, but did not extend below it. The small portion of the surface of the liver that presented in the costal angle was smooth; the right lobe did not extend below the ribs (vide Fig. 3). Another feature of the swelling was its obvious pulsation synchronous with the heart-beat. This pulsation could be seen as well as felt only during expiration, and it was unaltered when the patient assumed the prone position. It was a simple forward, non-expansile pulsation, evidently communicated.

The urine was phosphatic, free from albumen or sugar, its sp. gr. 1030.

The nature of the nodule being so obscure, and the relation its existence bore to the lad's general condition being quite undetermined, it was decided to watch the course of events. For a month no change was observed. His strength was not impaired to any greater degree, and as to emaciation he gained, if anything, a few pounds in weight. He was allowed up, and had ordinary diet. He had no dyspeptic symptoms, and the constipation became less troublesome, but he still remained passive and listless, and one was forced to conclude that the existence of the swelling had an effect rather on his mental than his physical state. That the latter had not been deteriorated was one out of many reasons which declared against its being connected with the stomach. But no further light could be thrown upon its nature. At the end of a month it was neither more nor less obvious than on admission, the only point in this respect being that it was always more prominent when the stomach was empty than when it was distended, probably because the liver was then pushed upwards under the ribs. The mobility with respiration and the pulsation were as marked as ever.

That it had undergone no change either in size or consistence was in favour of its being either an innocuous growth, or an obsolete and shrivelled, possibly calcified, hydatid cyst. That it was not a gumma was evident, not only from the absence of any syphilitic history, but from the fact that a course of iodide of potassium had no effect upon it. On more

than one occasion the idea of an exploratory incision was entertained.

FIG. 3.—Diagram showing area of hepatic dulness and site of nodule.

The note on March 17, with respect to the tumour, runs: "The swelling has hardly altered at all since admission. It is visible through the parietes except when the stomach is distended. It is hard and nodular, the projecting portion not being larger than a Barcelona nut. Its mobility is as marked as ever. It is now lying to the right of the middle line, and descends with respiration to the extent of nearly 2 inches vertically. During expiration it is pulsatile (communicated probably from the heart). It has often been observed to the left of the middle line, even when he is lying on his back. When he lies on the right side it disappears, when on the left it seems to pass beneath the ribs."

About this time he complained of pain at the seat of the tumour, and as this symptom did not abate, it was resolved to undertake the exploration, in which my colleague Mr. Gould fully concurred.

Accordingly, on March 24, Mr. Gould performed the operation. The surface of the abdomen having been thoroughly washed over with sublimate solution (1 in 2000), an incision, 3 inches long, was made through the linea alba from the xiphoid downwards. On opening the peritoneum, the left lobe of the liver came into view, and emerging from its upper surface, about half an inch from the lower margin, there projected a rounded mass the size of a chestnut, of a greyish colour, contrasting with the liver-substance which closely surrounded it. On passing the finger beneath the liver a much larger swelling the size of an orange, smooth and rounded, could be felt projecting from the inferior surface of the lobe; and it was easily seen on tilting up the lobe. The cystic nature of the tumour was now evident, and that it traversed the whole thickness of the lobe was shown by fluctuation being transmitted from the nodule in front to the swelling behind. By means of the aspirator the cyst was emptied of its contents, a clear colourless fluid. The cyst was stitched by fine catgut to the peritoneum on all sides, and then sutured to the abdominal wall. It was then incised, the edges of the cyst wall being again stitched to the peritoneum. A drainage-tube was inserted, and a pad of salalembroth wool placed over the wound.

The fluid had all the characters of hydatid fluid, and deposited a sediment which contained a very large number of scolices.

For a few days there was slight febrile reaction (maximum temperature 101·4°), a small amount of abdominal pain, and a faint degree of icterus, but no symptoms to cause anxiety. The cavity was irrigated daily with sublimate solution, the amount of discharge being about 1 oz.

On April 3, a collapsed cyst was extruded during the irrigation. It was apparently entire, no trace of an opening being visible, and was about the size of a Tangerine orange. Its wall was gelatinous in appearance, and was readily torn; it was laminated. On incision it was found to contain two or three daughter cysts as large as nuts, whilst its lining membrane was richly studded with adherent scolices.

The discharge now became faintly bile stained, and two days later (April 5) the whole of the tough, fibrous, adventitious cyst was similarly discharged through the wound. This cyst presented an incised opening about one inch in length, with at a short distance on each side the orifices of the punctures made by the sutures. There was now left a ragged cavity

about an inch in depth, the discharge from which was slightly bile stained; it rapidly contracted, and on the 13th the patient was allowed to get up, a small sinus only remaining. On the 28th he left for a convalescent home.

On his return he was seen on May 21. He was looking bright and well, and had to a considerable extent lost his former inanimate appearance. A cicatrix 3 inches long extended from the xiphoid, much puckered at its lower extremity, at which point the abdominal wall was retracted with every cardiac beat during expiration. The liver dulness did not extend below the costal arch or the xiphoid, and reached but a very short distance to the left of the middle line.

This case is mainly interesting from the obscurity of its diagnosis, and the fortunate, if unforeseen, issue of an exploratory operation undertaken mainly with a view to diagnosis. That there was a tumour in the substance of the left lobe of the liver, or on its surface, was fairly obvious from the physical signs, and that it was probably of much larger size than was apparent to the eye and finger was suggested by the transmitted cardiac pulsation. The hard nodular character of the projecting mass, and its remaining stationary for so long, seemed to tell against its being an active growth or a living hydatid, although that it might have been a shrivelled hydatid was thought very possible. It proved, however, to be living, and in a comparatively early stage for surgical intervention. Indeed, a simple puncture with evacuation of its contents might have sufficed to have cured it, but the apparently solid nature of the nodule precluded the idea of aspiration. For the patient the operation was highly satisfactory, for it has radically cured him of the disease, whilst delay would have rendered him liable to the risk of rupture or suppuration.

Hydatid tumours are far less common in the left lobe than in the right, a difference that may mainly depend on the freer access to the larger lobe by means of the blood-channels. It is instructive that the hydatid cyst itself must have collapsed and detached itself from the adventitious cyst directly the contents were evacuated; for the true cyst was entire, and it was only the fibrous wall that was incised. There must therefore be but very slight if any actual organic connection between the ectocyst and the adventitious cyst wall, which may explain the good effects of simple puncture in killing the parasite. I do not suppose that it has often happened that so small a cyst as this has been extirpated from the liver.

XV.—*A Case of Hydatid Cyst projecting from convex surface of Liver and encroaching on Thorax: Incision and drainage through the pleural space: Recovery.*

By Edmund Owen, M.B. Introduced by the President. *Read December* 9, 1887.

A. C., a married woman, who was born in London, and had lived there all her life, came under Dr. Broadbent's care on May 12, 1886. With the exception of an attack of pleurisy of the right side two years previously she had had no particular illness. She was admitted on account of frequent attacks of vomiting, and of pains in the right hypochondriac region.

The liver was involved in a hard, smooth, non-fluctuating tumour, which, in addition to thrusting the base of the lung up to the fourth rib, and causing a bulging of the lower ribs of the right side, extended as a dull mass almost to the umbilicus. On account of the hardness, smoothness, and apparent solidity of the hepatic mass, there was at first doubt as to its exact nature; it did not move in respiration nor with change of position of the patient.

On May 27, on exploring with the aspirator in the middle line, about 2 inches below the ensiform cartilage, 36 oz. of colourless hydatid fluid were withdrawn, but no hooklets were to be found in it.

The tumour receded from the epigastrium after this operation, but still there was pain in the region of the liver, and on June 14, a needle was inserted below the right scapula, but no fluid was obtained. Dulness gradually extended upwards into the right mammary region, until a distinct convex projection could be made out by percussion, the summit of which nearly corresponded with the nipple. The aspirator-needle was passed into the base of this projection, through the seventh space in the nipple line, 68 oz. of fluid being withdrawn; this was bile stained and contained hooklets and albumen. The dulness disappeared with the removal of the fluid.

It was noted that as the enlargement returned it did not take place downwards, as at first, but upwards; and an aspiration attempted later, during Dr. Broadbent's absence, 1½ inches below the xiphoid cartilage, in the middle line, did

not reach fluid, although the tumour at that time extended to the left and even raised the heart.

Early in September she was received into the Middlesex Hospital, during the closure of the wards of St. Mary's for repairs. On readmission into St. Mary's, October 25, it was found that the rounded projection in the nipple line had not returned, but that dulness was continued upwards from the liver on the lateral aspect of the chest, and as this increased, on November 18 aspiration was again performed, the needle being introduced below the seventh rib in the mid-axillary line, and 40 oz. of bile-stained pus containing hooklets were withdrawn. Local peritonitis followed this operation, ushered in by protracted vomiting, and attended with severe pain.

In the beginning of the present year Dr. Broadbent asked me to see the case with him, and on January 6 I made an aspiration, passing the needle from below the ribs obliquely upwards. Fluid was reached, but at some depth, and much shock and vomiting followed.

The dulness continued to ascend, and there was fear lest the cyst should burst through the diaphragm. It was agreed, therefore, that it should be incised and drained. The surgeon was in favour of effecting this from the abdominal side; the physician advised attack through the thoracic wall, trusting that as the lung had long been out of the way, the phrenic pleura might be found adherent to the costal layer. Ultimately it was agreed that when the woman was on the operating table, and anæsthetised, the depth of the fluid from the surface of the body should be measured by exploratory aspirations in the two regions, and that if the tumour appeared to be fairly accessible from below, the abdominal route should be chosen.

On February 14, after duly exploring, there was nothing for it but to make the incision in the eighth intercostal space, just behind the anterior axillary line. As soon as the costal pleura was divided, air rushed freely in with a very audible sound, and, the finger being introduced, the diaphragm was at once felt bulging up along the inner surface of the ribs, whilst the lung had retired beyond reach. The intercostal space, which was fairly roomy, was forcibly widened, but it was not thought necessary to excise a piece of rib. The phrenic pleura and the diaphragm were then carefully incised, and the abdominal cyst was discovered. A certain amount of its contents was withdrawn by aspiration, so as to relieve its tension and to permit of some of the face of the sac being

drawn through the diaphragm, and across the shallow pleural cavity to the skin wound, to which it was secured by four hare-lip pins.

Thus the pleural wounds were placed in mutual contact, and it was arranged that when they had become firmly glued together by adhesive inflammation, so that there would be no risk of leakage into the pleural cavity, the cyst should be incised and drained. Warm carbolised water was used during the operation, and the wound was dressed with iodoform and with pads of wood wool.

On the fourth day the dressings were removed. (The temperature had not reached 100° F.) The wound was clean, the pleural surfaces were firmly adherent, and bright granulations covered the exposed part of the cyst. On incising the cyst, 28 oz. of bile-stained fluid escaped, together with thick pieces of cyst walls like so much rotten wash-leather. A large flanged drainage-tube was inserted, and the cavity was washed out with warm iodine water, decolourised by carbolic acid. Every day, and as often as was necessary, the dressings were changed, and the contracting cavity was washed out, enormous pieces of thick cyst walls constantly escaping. The patient's recovery was uninterrupted, and when she presented herself at the hospital the other day she was looking well and strong. For some time after the operation the pleural cavity contained a good deal of air and a small amount of fluid, but Dr. Broadbent informs me that these conditions have long since passed away, and that the base of the lung has descended to its proper level.

This case in is many respects parallel to one which Mr. Godlee reported at the Dublin meeting of the British Medical Association,* in which, in June last, he attacked and successfully drained a hepatic abscess through the pleural space. He removed 1½ inches of the ninth rib, and having incised the costal pleura, stitched the phrenic pleura to the margin of the wound. The diaphragm was then incised, and the peritoneal cavity being found obliterated at that region the abscess was opened and drained.

It is a question, perhaps, whether a hepatic abscess or hydatid cyst, or a pulmonary abscess should be opened up on the occasion of incising and stitching the pleura, or whether the risk of leakage occurring into the pleural space is not diminished by waiting until the wound track has been shut

* *Brit. Med. Journ.*, Oct. 22, 1887.

out by adhesive inflammation. For my own part, I prefer to adopt the latter procedure.

Then comes the question, How long does it take for the wounded serous surfaces to become securely glued together? This is a matter on which vivisection ought to throw some light—The time may possibly be measured by hours rather than days.

Lastly, in the *technique* of the operation, it may be well to call attention to the extreme handiness and value of hare-lip pins, instead of sutures, in the fixation of the pleural surfaces. Even were it a question of fixing the lung itself against the thoracic wall, I would prefer to use the slender steel pins.

I venture to think that this account may be considered a not unimportant addition to the comparatively small collection of cases in which the surgeon has operated across a healthy pleural space. Such a measure could hardly have been justified, even if it had been imagined, in the pre-Listerian era. Now, however, it would seem that a "careful" surgeon—I use the adjective in the sense in which Mr. Savory employs it—need have as little dread of operating through a healthy pleura as of opening up the peritoneum, the knee-joint, or the cavity of the arachnoid.

XVI.—*Peculiar mode of Rupture of a Hydatid Cyst. With Case.* By Frederick Treves. *Read December* 9, 1887.

A WOMAN, æt. 21, was admitted into the London Hospital under my care on December 27, 1886, with the following history.

At midnight on Christmas Day she was "romping" with a party of friends. During the progress of the amusement her husband, in a moment of exuberant affection, seized her round the waist from behind and hugged her. While thus holding her he lifted her once or twice from the ground. An unexpected effect followed: the woman on being released fell to the ground, complaining of great pain in her abdomen and extreme faintness. She was at once carried to bed, but she could not bear to have her clothes removed nor to lie down. She sat up all night in great pain and vomited once. On the following morning she took some castor-oil, which was at once vomited. During the day the pain continued and she was sick three times. About noon on this day it was noticed that the abdomen was swelling, the swelling being limited to the region about the margin of the right ribs. During the day and the night of the 26th the patient remained in a sitting position. She ceased to be sick, but the abdominal pain, which was persistent and not like colic, continued and entirely prevented her from sleeping. The abdomen became more swollen and exceedingly tender. On the following morning, the 27th, she came to the hospital, thirty-five hours after the injury.

During these thirty-five hours she had not slept, had taken no food, and had vomited four times. She had passed water twice, but her bowels had not acted.

On admission, she was in a very exhausted condition. Her tongue was brown and quite dry, the face was pinched, the eyes sunken, and the pulse small, rapid, and feeble. The abdomen was tender and the seat of a continuous pain that prevented the patient from lying down. It was slightly swollen, but the swelling was one-sided and was most marked between the ribs of the right side and the umbilicus. Over the

swollen district it was absolutely dull on percussion. Above, the dulness fused with the hepatic area; posteriorly it extended to the spine, occupying the right loin; in an inward direction it reached a vertical line some 3 inches to the left of the linea alba; below it extended to a point some 2½ inches below the umbilicus. Both iliac fossæ and the left loin, as well indeed as the whole of the rest of the abdomen, were evenly tympanitic. The dulness ended all round in an abrupt line, there was no fluctuation, the temperature was sub-normal. The patient was very spare and much below the average height. She maintained that before the accident her abdomen had always been of normal size. She had been once pregnant three years before the time of admission; the child was born dead at the sixth month. She had had excellent health, her bowels had always been regular, she had never had jaundice, and had suffered from no digestive disturbances. She was perfectly clear that no swelling of any kind had existed prior to the injury. Her last meal had been eaten four and a half hours before the accident.

The urine was normal, there was no cough, no evidences of bruising and no injury to the ribs.

I ventured to diagnose the case as one of subperitoneal hæmorrhage due probably to rupture of some of the ultimate branches of the right internal mammary artery. The absence of ecchymosis and the extent of the dull area rendered it clear that the effusion was not subcutaneous. It could not have been intermuscular since it passed so readily across the median line. It was not intra-peritoneal because the area of dulness was in no way modified by change of position.

Under the influence of morphia and hot fomentations the patient rapidly improved. By January 10, she was quite free from pain and the abdomen from tenderness. The patient took her food well and was anxious to get up. No further symptoms of any kind had developed. The area of dulness had become less; it had now reached the middle line on the inner side and the umbilical level below. It was still dull in the right upper loin and in the hepatic region, there was no ecchymosis, and the abdomen had nearly regained its normal aspect. The area of dulness steadily diminished. By January 31, it was bounded on the inner side of a vertical line 2 inches to the right of the linea alba, and by a curved line at the level of the umbilicus; it was still quite dull in the right loin above the level of the navel. Below the line of the right lower costal cartilages the swelling was still obvious, and here

it formed a soft tumour that distinctly fluctuated and was about the size of the vertex of the skull. There was no ecchymosis nor did any appear at any time. I continued to hold the view that the case was one of subperitoneal hæmorrhage. The patient was so well that I could no longer induce her to remain in bed; she got up and busied herself about the ward.

By February 7, the dulness was of still less extent but the fluctuating swelling just below the ribs, in the mammary line, was more district.

A peculiar circumstance has now to be recorded. I determined to try the effects of pressure upon this supposed hæmorrhagic effusion. The whole abdomen over the swollen district was consequently enveloped in many turns of Martin's elastic bandage. It caused the patient no pain but made her feel generally uncomfortable. In a few hours her temperature was found to have risen from normal to 101°. During the twenty-four hours that the bandage was retained it kept high; as soon as it was removed the temperature returned to normal. On February 9, I repeated this experiment. In a few hours the temperature again rose and remained high until the bandage was finally removed. If the pressure induced absorption it was apparent that something noxious was being absorbed. I had never seen a like disturbance follow the application of elastic pressure to large extravasations of blood. It had appeared to me that the high temperature met with in some sarcomata that were quite free from inflammatory disturbance was due to the absorption of some noxious matter under pressure. I have seen this rise of temperature most noticeably in such sarcomata as had reached the limits of extreme tension within their capsule, especially in subperiosteal growths and in sarcoma of the testes, and I have observed this temperature to at once subside when the tension was relieved either by nature or art. It would be interesting to know whether a like rise of temperature would have occurred from elastic pressure in the present case had the effusion been blood.

The patient now became unaccountably weak. She rapidly lost flesh and strength. Her temperature remained normal, and she exhibited no symptom but that of increasing feebleness. She had gone back to bed. By Feb. 25, the dulness had almost disappeared. The right loin was quite clear. Nothing remained but a well-defined, rounded, and very prominent tumour under the right ribs. This mass was the size of a large fœtal head. It could not be separated from the

liver dulness. It did not move on respiration. Its most prominent part was in a line with the nipple. It fluctuated, and the contained fluid appeared disposed to come through the much-thinned integuments. I resolved to incise the tumour, having long since abandoned a coherent diagnosis. It was opened close to the tenth rib, and out of it gushed several pints of hydatid fluid. This fluid was quite clear, contained a few hooklets, but not the least trace of blood. The cavity was washed out and drained; some slight suppuration of the cyst followed in the course of a week, but the discharge was trifling. The patient became gradually weaker and weaker, and died, apparently of simple exhaustion, on March 22, nearly a month after the operation.

The autopsy showed the body to be greatly emaciated. The whole of the right lobe of the liver was hollowed out into a large hydatid cyst that still contained a pint of fluid. It extended from the under surface of the liver downwards in front and to the right of the ascending colon, and traces of it reached to within 1½ inches of the iliac crest. It was adherent to the peritoneum of the anterior abdominal wall. No traces of the separation of the parietal peritoneum remained, but the serous membrane in the front of the abdomen below the liver was distorted by adhesions. The operation wound opened into this cyst. Behind the right lobe of the liver, and between it and the diaphragm, was a second cyst the size of the fist that communicated with the greater sac by an opening admitting three fingers. It was entirely extra-peritoneal.

It is evident that it was this extra-peritoneal sacculus that had been ruptured by the injury, and that the fluid, pent-up probably under pressure, had found its way along the loose subperitoneal connective tissue to the anterior abdominal parietes.

Why this fluid had receded was less easy to understand. During the three months that had elapsed between the accident and the patient's death, the traces of its course had been removed, and the track it had followed had been further disturbed by the gradual growth of the main hydatid cyst.

The left lobe of the liver was much enlarged and fatty. No other viscera showed noteworthy changes.

The position of the extra-peritoneal cyst, and the action of a constricting force applied from behind, render the rupture of the sac intelligible. It would have been compressed between the posterior parietes of the abdomen and the liver. The sudden removal of the intracystic tension may explain

the sudden faintness. The character of the tissue into which the fluid spread serves to account for the tardy appearance of swelling, and its steady increase up to a certain point. With the development of the anterior cyst towards the peritoneal cavity the extravasated fluid appears to have returned to the original cavity from which it escaped.

XVII.—*Obstruction of the Bowels by large Gall-stones. With Cases.* By T. J. Maclagan, M.D. *Read January* 13, 1888.

THIS paper consists of a record of two cases in which this accident occurred.

Case 1.—A lady, æt. 63, of spare habit, the mother of a grown-up family, had suffered for years from dyspepsia, flatulence, and a tendency to constipation. She had never suffered from jaundice, and had never passed gall-stones. In November, 1886, while residing at Folkestone, she was seized with violent pain in the abdomen and the symptoms of intestinal obstruction. She was laid up for several weeks and was attended by Dr. Bowles, who told me that the symptoms of obstruction were marked, and her illness very severe. Dr. Bowles then detected a tumour in the region of the gall-bladder. The cause of the obstruction was not determined. She was treated by opium, got over the attack, and went home at the end of December.

In the middle of January she had what was regarded as a very severe bilious attack, accompanied by much pain.

On February 3, she came to London. Though weak and still having occasional attacks of sickness, especially in the morning, she was able to get about, and drove out daily. The appetite was not good, but she took a fair amount of food; the tongue was slightly furred, the temperature normal or a little below it. The bowels were kept regular by a simple aperient pill.

On examining the abdomen a firm smooth tumour the size of the fist was felt in the region of the gall-bladder; it was slightly tender on pressure, moved downwards on deep inspiration, and was evidently attached to the liver, the lower edge of which could be felt more distinctly than natural along its whole extent.

On February 14, the patient had a severe attack of pain in the abdomen, accompanied by much sickness and nausea. The vomiting was peculiar, the ejected matter exceeding in quantity anything that could have been lodging in the stomach; it came up without any effort in large quantities, and evidently consisted of the contents of the small intestine. The patient

was in such pain that she had to be kept under the influence of morphia, ten minims of the solution of bimeconate of morphia being given every two to four hours, according to the severity of the pain. She was fed by nutrient enemata. These acute symptoms lasted for five days.

On February 20, sickness and pain had so diminished that the morphia could be dispensed with, and nourishment by mouth resumed; the bowels, which had not acted for five days, again acted sufficiently under the influence of a simple enema. The tumour remained the same.

On March 4, after an interval of twelve days, during which the patient had sufficiently recovered to get into another room, the same train of symptoms recurred—at times intensely acute griping pain in the abdomen, situated not in the tumour but lower down, below the umbilicus and stretching across the abdomen, constant nausea, and the occasional rejecting by the stomach of a quantity of fluid, evidently the contents of the small intestine. So severe were the griping pains that morphia had to be given subcutaneously. In four or five days the acute symptoms again passed off, and the patient, though very weak, again took food by mouth, and only an occasional opiate when there was much griping. In this state she continued, only never quite free from nausea, for about ten days more.

On March 21, she had another attack characterised by the same symptoms—vomiting, constipation, and acute pain—again calling for the use of morphine. This attack passed off in four days.

On April 1, after one week's interval, she had a fourth attack with all the old symptoms,—great and distressing nausea, the rejection by vomiting of large quantities of fluid tinged with bile, and most acute attacks of intestinal agony, relieved by the subcutaneous injection of morphia.

On April 6, the pain had so diminished that the morphia could to a great extent be dispensed with, but nausea continued to be very distressing. The patient did not rally from this attack, but remained weak and prostrate. She had occasional attacks of griping pain relieved by a dose of morphia.

On the evening of April 18, she passed by the bowel with a stool, without effort or inconvenience, a large gall-stone nearly an inch in diameter. On the following morning she passed a second a little over an inch in diameter. The next day she passed a third, and two days later a fourth of about the same size. These stones all presented the flat-

tened surfaces commonly noted when several stones coexist in the gall-bladder. Patient stated that she passed something very like these soon after her return home from Folkestone.

Having got rid of these it was hoped that she might now begin to pick up. These hopes were not realised. Weakness increased; pain was no longer severe, but its place was taken by frequent vomiting and a constant sense of nausea, which the patient said was even more trying than the pain. The swelling, which up to this time had remained stationary, began rapidly to increase in size. Instead of being limited to the region of the gall-bladder it gradually extended and involved the whole liver; the left lobe could be felt encroaching on the region of the stomach, while the right continued to increase in size till it impinged on the crest of the ilium, so that the lower border of the region of hepatic dulness was ultimately represented by a line extending from the crest of the right ilium to the centre of the left hypochondrium.

The temperature, which had generally been below 98°, rose to 100° on April 29, and remained at and about that point till the patient died. She gradually sank and died on May 8. After the stones were voided the bowels gave no trouble.

Post-mortem (thirty hours after death).—Liver was much increased in size, pale in colour, and weighed (there were no scales) two thirds more than normal. It was almost entirely fatty. Here and there through its substance at different points was noted a localised increase of the fibrous structure, looking at one or two points almost like a cicatrix.

The gall-bladder and duodenum were intimately bound together, and communicated with each other by means of a free opening. The contents of the gall-bladder were indeed those of the small intestine. In its remains was found another stone similar to the four passed during life. All around it there was much inflammatory thickening. The cystic duct was obliterated; the common and hepatic ducts were patent.

Here and there along the course of the bowel bands of lymph were noted on its peritoneal surface. There were found only the remains of the folds of the ileo-colic valve.

It will be observed that the illness which this patient had while under my care essentially consisted of four distinct attacks characterised by acute pain in the abdomen, sickness, nausea, and the occasional rejection by the mouth of the contents of the small intestine. During each attack the

bowels ceased to act. The first attack lasted from February 14 to February 20, six days; the second from March 4 to March 10, six days; the third from March 21 to March 25, four days; and the fourth from April 1 to April 6, five days.

There can be little doubt that these four attacks corresponded to, and were symptomatic of, the passage down the small intestine of the four gall-stones which she subsequently voided. It is probable too that the attack which she had in Folkestone, though more severe, was similar in character, and that the patient was correct in her surmise that she had passed a stone in December. In this the first attack the signs of intestinal obstruction, which Dr. Bowles told me were very marked, would necessarily be more pronounced than in the subsequent ones, for the first stone would stick at the ileo-colic valve, through which it would have to ulcerate its way before the bowel was relieved. The subsequent ones, finding the valve thus destroyed, would readily pass into the cæcum.

The rapid enlargement of the liver which took place during the last three weeks of life was very remarkable. During life this was believed to be of malignant origin, a supposition which was disproved by post-mortem examination.

Case 2.—A lady, æt. 60, mother of a grown up-family, had suffered for some years from flatulence and indigestion. She had never suffered from jaundice, and had never passed gall-stones.

The winter of 1886—1887 was spent in the Riviera, where she was much upset by the earthquakes. She came to London the middle of April, 1887. I saw her on the 19th of that month. Then her chief complaint was of pain in the stomach, coming on about an hour after food, and lasting generally from one to two hours. The appetite was bad and the bowels constipated; tongue slightly furred; pulse 70, weak; temperature normal; skin natural in colour; urine normal. On examining the abdomen there was found in the region of the gall-bladder a tumour the size of a hen's egg, smooth on the surface, tender on pressure; the pain produced by pressing gently over it was said by patient to be the same as that felt an hour after food. The tumour moved downwards on deep inspiration, and was evidently attached to the liver.

There was slight tenderness on pressure too along the lower border of the liver, which could be felt more distinctly

than natural. Simple diet and small doses of sulphate of soda were prescribed. The patient went about, and except for pain after food, felt fairly well.

She remained in the same condition till May 10. On that day she was seized with sickness, vomiting of bilious matter, and griping pain in the abdomen. On examining the swelling it was found to be smaller in size and less tender on pressure. She was kept in bed, and fed on liquid food.

On the following day her symptoms had all increased in severity. She vomited large quantities of mucus tinged with bile, the bowels were loose, the stools scanty and consisted chiefly of mucus. There was a good deal of flatulence and much griping pain in the abdomen.

On the next day there was only a slight action of the bowels, but the patient vomited considerable quantities of mucus tinged with bile, and the griping pain in the abdomen had increased in severity. She was ordered an effervescing bismuth and soda mixture, and warm poultices to be applied over the abdomen.

On the following day, May 13, the sickness was less, but the abdominal pain had much increased in severity, coming on in severe spasms. Flatus only was passed by bowel; a simple enema came away unchanged. A nutrient enema was given every three hours, and she had, every three hours, ten minims of the solution of bimeconate of morphia with five of tincture of belladonna. No nourishment was given by mouth.

After May 12 there was no stool, but up to the 20th flatus was occasionally passed. Patient retained the nutrient enemata and was kept under the influence of morphia. After a few days she complained of dryness of the mouth. To relieve this there was administered from time to time by the mouth a little cream and water, and a little brandy and water. The abdomen also was rubbed gently with olive oil, and a warm poultice applied. The bowel was washed out every second day by a warm-water enema, which came away unchanged. The abdomen became distended, and the signs of intestinal obstruction more pronounced; the coils of small intestine could be seen rolling and coiling about and forming moving ridges under the walls of the abdomen. As day after day passed without any relief, the abdomen became more and more distended, and the coils of the bowel more and more distinct. The patient was kept under the influence of morphia sufficiently to prevent pain and restrain excessive intestinal action, and was fed by enemata.

On May 21 (the last stool having been on the 12th), the whole abdomen was equally and generally distended, the coils of the small intestine were seen rolling about all over the abdomen. For the first time there was noted tenderness on pressure in the right iliac region. The region of the gall-bladder had never been free from tenderness.

There was evidently obstruction low down in the small intestine. The question for consideration was, what was the cause of the obstruction? On this point I had very little doubt. The whole history of the case, the existence of a tumour in the region of the gall-bladder, the distinct signs of acute irritation of the small bowel preceding the signs of obstruction, the diminution in the size of the tumour immediately antecedent to the onset of the intestinal irritation, and the subsequent speedy development of the signs of obstruction of the small bowel, formed a sequence of events which were best explained by the supposition that the bowel was blocked by a large gall-stone which had passed directly through an ulcerated opening from the gall-bladder into the duodenum. The sequence of events was as follows:

1. A swelling in the region of the gall-bladder.
2. Sudden diminution in the size of this swelling.
3. The symptoms of acute irritation of the small intestine, excessive flow of bile-tinged mucus, and severe griping pain.
4. The signs and symptoms of obstruction of the small intestine.

The condition of matters which now (from May 21) had to be dealt with was obstruction of the bowels by a gall-stone so large that it had travelled down the course of the small intestine with difficulty, and now had its further progress arrested by the ileo-colic valve. The stone was sticking at the valve because it was too large to pass through. The best solution of the difficulty was that the stone should ulcerate its way through the valve, and in the hope that this would occur the opiate treatment was continued.

For ten days there was no change in her condition except that she got weaker, and that the abdomen became more distended. Nothing, not even flatus, passed by bowel. The nutrient enemata, the morphia, the rubbing with oil, the cream and water, the brandy and water, and the poultice, were continued. Patient complained chiefly of dryness of the mouth and of hiccough. There was no sickness of any consequence. The temperature ranged from 98° to 99°. A

long tube was passed into the bowel from time to time with no result. Such was the state of matters up to May 30. On that date there came away through the long tube a large quantity of flatus. On the four succeeding days the same thing occurred. On the last of these four days, June 3, the temperature rose to 100·4°, and there was increased tenderness over the right iliac region. On June 4, the temperature rose to 101·4°, and tenderness over the right iliac region was very marked. There had been no stool for twenty-three days, the last having been on May 12, and for ten of these days, May 20 to 30, not even flatus was passed. On passing the tube this day there flowed through it, besides much flatus, 32 oz. of fluid coloured by bile. On the 5th the temperature was 100°, and iliac tenderness was not so acute. Again the tube was passed, and fluid with much flatus came away.

From this time the patient continued to improve. The temperature became normal; tenderness in right iliac region decreased; liquid stools and flatus passed naturally; abdominal distension gradually disappeared; patient began to take nourishment by the mouth; the enemata were discontinued, and the sedative was given only at night to procure sleep. For a time the dejecta consisted almost entirely of a viscid mucous secretion, ropy in consistence, like that noted in the urine in cases of chronic cystitis; so thick was it that it would not flow through the long tube, and yet there was nothing solid. It evidently consisted of the excessive mucous secretion produced by the mechanical irritation of the stone in its passage down the small intestine. Not for ten days was this quite got rid of. About that time the stools began to assume a more natural aspect, and on June 23, for the first time, a solid motion was passed, small, but quite natural in appearance.

Diet was gradually improved. At first beef-tea, milk, an occasional cup of tea, which was much appreciated; then a variety of soups, light puddings, a glass of champagne, and so gradually she made her way to an ordinary light diet of solid food.

The iliac tenderness disappeared, but very firm pressure gave discomfort, and one never could get the hand satisfactorily into the iliac fossa. The fulness over the gall-bladder, though much less, had not entirely disappeared; a lump was still felt there, and there was still appreciable tenderness on pressure over it and along the lower border of the liver.

On June 24, it was noted that a distinct lump like a walnut or big gland could be felt in the right side near the crest of the ilium; at the same time it was observed that the hand could be pressed down into the iliac fossa as it could not be before. This lump was believed to be the stone which had passed out of the cæcum into the ascending colon.

Patient continued to improve and to gain strength. Flatulence troubled, but not more than it had often done before her illness. The stone did not move from above the crest of the ilium. The lower border of the liver was still tender on pressure, and a small lump could be felt in the region of the gall-bladder, leading one to suspect that one or more stones still remained there. This suspicion ere long became a certainty.

Patient went on improving till the middle of July, sitting up in her room, and even being carried into another.

On July 15, she complained of feeling sick, and of having some pain in the abdomen; flatulence was troublesome. She was kept quiet and put on liquid food. The bowels had moved naturally the previous day.

On the 16th, she still felt sick and retched a little, but brought up nothing. A soap-and-water enema was followed by a sufficient action of the bowels. There was tenderness over the gall-bladder and along the border of the liver, but the lump was scarcely to be felt; the temperature was 98·6°.

On the 18th, and again on July 20, there was a slight motion after an enema and a good deal of flatus. After this the bowels ceased to act. The block was not absolute, for flatus was passed in more or less quantity every day, but nothing more than that from July 20 to August 5, sixteen days. During these days we had all the old symptoms over again, griping pain, abdominal distension, hiccough, retching, occasional sickness. The coils of the small intestine could be seen in the abdominal walls. There was persistent tenderness along the border of the liver, and shifting spots of tenderness here and there about the abdomen. The right ilium was not tender till the beginning of August.

Patient had the same treatment as before, morphia and nutrient enema being the chief things.

On August 4, the temperature was 99·2°, and in the evening 98·6°. At no time had it been higher than 99·6°. On that day much flatus was passed. There was iliac tenderness.

On August 5, about a pint of fluid tinged with bile was passed through the long tube. There was rather more

tenderness on pressure over right iliac region, but the most tender part was over the liver. Temperature in morning 99·6°, and in evening 101·2°.

On August 6, 7, and 8, about the same quantity of bile-tinged fluid was passed through the long tube. The temperature rose, and during those days ranged from 101° to 103°. There was marked tenderness over the liver.

On the 8th the tube was passed without result, but every day after, a few ounces of bile-tinged fluid came through it. The abdomen remained distended; the hepatic tenderness was very marked. The right iliac region was tender, and some fulness could be felt there. The first stone was still distinctly felt near the crest of the ilium. Patient was very prostrate. She was much distressed by hiccough and occasional retching; the hepatic border was very tender. Pain was kept under by morphia. Temperature ranged from 101° to 102°. She gradually sank, and died on August 12.

No post-mortem could be obtained.

With regard to diagnosis the facts to be noted in this case are:

First, that the earliest symptom was pain in the epigastrium coming on an hour to an hour and a half after food, and that pressure over the gall-bladder gave rise to pain identical in character with that felt after food. The probable explanation of this pain is that adhesions had already formed between the gall-bladder and duodenum, and that the natural movements of both of these structures when the duodenum began to participate in the digestive process, which would be an hour to an hour and a half after taking food, would cause a strain on these adhesions and consequent pain.

Second, the sudden diminution in the size of the gall-bladder (from that of a hen's to that of a pigeon's egg) resulted from the direct passage of a great part of the contents of the gall-bladder into the duodenum.

Third, the symptoms of acute intestinal irritation were a consequence of the same accident.

Fourth, the severe and even agonising griping pain in the abdomen was symptomatic of the descent of the calculus down the small intestine.

Fifth, the obstruction of the bowel resulted from the blocking of it by the calculus, a block which would become more and more complete as the stone descended from the duodenum into the narrow jejunum and thence into the still narrower ileum, and would become absolute at the latest by

the time it reached the ileo-colic valve, where it would necessarily stick for some time.

And sixth, that the passage of the stone through this valve would necessarily be followed by rapid amelioration of all the symptoms.

Treatment essentially consisted in maintaining the patient's strength, and in keeping the bowel quiet. The former point could only be attained by giving nutrient enemata, for it was worse than useless to put food into an already obstructed and loaded small intestine. To keep the bowel quiet nothing takes the place of opium or one of its preparations. The action of this remedy is twofold—first, it relieves pain; second, it restrains excessive and possibly injurious action of the bowel. Excessive action does not tend to remove the obstructing cause, for it affects the portion of bowel below as well as that above the seat of obstruction. In its action the bowel is apt to injure itself. To keep it quiet and allow the calculus gently to slip along is the object in view. Nothing attains this object so well as opium.

In both cases it is to be observed that death was due not to the bowel obstruction but to inflammatory disturbance in and around the liver. The obstruction was got over in each case, and had there been nothing else to deal with both patients would probably have recovered. In each case, however, the frequent opening up of the wound in the gall-bladder, and the passage into it of the contents of the intestine (liquid and gaseous) produced inflammation, which, originating in and around the gall-bladder, spread from it to the hepatic structures.

Had there been only one stone to deal with it is most likely that both patients would have got well. On the other hand, had there been only one stone of the size of the first it would probably have remained quietly in the gall-bladder, giving no trouble till it grew so large that it could not possibly pass down the small intestine.

This question of the number and size of the stones is one which has an important bearing on another question of much practical importance, viz. the advisability of operative interference, a question which must at times present itself. The literature of the question abundantly proves that the small intestine is sometimes blocked by gall-stones so large that they cannot possibly pass down it. To remove or break up the stone gives the patient the only chance of recovery; and

in a recent number of the *Lancet* (December, 1886) a case is recorded in which a stone, so large that it could not have passed, was successfully removed from the small bowel by Mr. Thomas Smith. In this case the patient recovered. But for the operation he would certainly have died.

But in the two cases which I have related the patients could not have derived any benefit from surgical interference. One could not in either case have benefited the patient by operating on the first stone, for in both the first stone passed through the small bowel, and the patients, so far as that stone was concerned, recovered. If they had been operated on they could not have got over it better, and there would have been superadded to all the risks which they ran those necessarily attendant on the performance of a formidable operation. Would one have operated on the second stone? It is sufficient answer to say that in each the second stone passed more readily than the first. Again, had it been operated on the third would have come down before the wound was recovered from, and would probably have forced its way through the recent incision, causing fatal peritonitis. At no time, therefore, could an operation have benefited either of my patients.

In connection with this subject I would draw special attention to three points:

1. Gall-stones are not likely to ulcerate their way through the gall-bladder into the intestine before they have distended the gall-bladder to the full extent of its endurance.

2. If the distending mass consist of only one stone it must, before it distends the gall-bladder to the full, be so large that it cannot pass down the whole course of the small bowel, and is likely to be arrested even before it reaches the ileum. In such a case surgical interference gives the best, nay, the only chance of recovery.

3. If the distending mass be composed of several stones these may pass down the small intestine, with difficulty and much pain it may be, but still pass, till they reach the ileo-colic valve, where the first stone at least would be arrested.

In no case is it possible to gauge the exact size of the stone, but the appearance and shape of the abdomen, the presence or absence of localised pain, the presence or absence of indications of inflammatory disturbance, the persistence or decline of the vomiting, will generally enable us to form some idea as to whether the stone is sticking at one place or moving on.

If the abdominal distension do not materially increase from day to day, if the coils of the small intestine do not seem to become more numerous and perceptible, if there is localised tenderness at one spot, and the indications of inflammatory disturbance there, then there is reason to believe that the stone is sticking, and that is a reason for surgical interference.

If, on the other hand, the altering shape of the abdomen, the shifting character of the tender spots, and the absence of any inflammatory indications lead one to think that the stone is passing down, no matter how slowly, then surgical interference is not warranted. In such cases it would most seem to be called for when the stone is sticking at the valve, and when the signs of inflammatory disturbance are marked; but it is probable that a stone which has found its way down to the valve will also find its way through it, if we only keep the patient under the influence of opium, and have patience.

As regards the time requisite for such a result Case 2 gives indications of some value, as its nature was diagnosed early, and it was watched from beginning to end. In it the stone fitted the bowel pretty tightly, and passed down with difficulty.

The stone entered the duodenum on May 10. In ten days the general distension of the abdomen, and tenderness and some fulness in the right iliac region, indicated that it had reached the ileo-colic valve. It stuck there for thirteen days, and on the fourteenth it passed into the cæcum.

The moral of the case is that it takes a tightly-fitting stone ten days to reach the ileo-colic valve, and a fortnight to ulcerate its way through it. If a patient takes opium well, and retains the nutrient enemata, one might even afford a few days more before asking the surgeon's aid.

The possibility that a second stone may follow in the wake of the first will always be a reason for not cutting into the bowel so long as there seems a reasonable chance of the stone finding its way on.

Where it is decided to operate the mode of doing so must be left to the surgeon. But I cannot refrain from adding a line to express my preference for the plan suggested by Mr. Lawson Tait of breaking up the stone (these stones are very brittle) by means of a needle passed through the intestinal wall below the seat of obstruction. The risks of incision, and the risks attendant on the descent of another stone, are both avoided by this procedure.

XVIII.—*A Successful Case of Laparotomy for Intestinal Obstruction from a Gall-stone.* By H. H. Clutton. *Read January* 13, 1888.

THIS was a case in which the abdomen was opened on account of obstruction, which was thought to be due to an impacted gall-stone. The calculus being felt in the lower end of the ileum, was pushed through the ileo-cæcal valve. The patient was relieved of her symptoms and made a perfect recovery.

Mr. Sidney Harvey, to whom the credit of the diagnosis and early operative treatment are mainly due, called upon me about 12 o'clock at night on the 25th of last May. The history which he gave me was as follows:

His patient was a woman of 70 years of age, who had fifteen months before passed a large facetted biliary calculus. After she had recovered from the jaundice and abdominal tenderness from which she at that time suffered, Mr. Harvey was able, as long as the patient was under treatment, to feel a tumour in the position of the gall-bladder. She suffered from no further symptoms till the present attack. This began about twenty-four hours before the operation was performed, with sudden, acute pain in the abdomen and urgent vomiting. The bowels were moved the day before and did not act again till after the operation.

On examination Mr. Harvey found that the tumour in the region of the gall-bladder had disappeared. The symptoms, which were unrelieved by large doses of opium, continued without any intermission, and the patient was becoming exhausted.

At 1 A.M. on the morning of the 26th I saw the patient with Mr. Harvey. Her face had an anxious expression so commonly seen in obstruction cases. The pain, which was referred to the umbilicus, occurred in frequent paroxysms and was evidently severe from the writhing action of the patient. The abdomen was not distended, and could be manipulated between the attacks. She had vomited clear watery fluid in such a quantity as to completely fill a chamber-vessel. This amount had been ejected in the course of the last few hours, and we were told that a similar quantity had been thrown

away in the earlier part of the evening. It was at first a colourless translucent fluid, containing neither food nor bile; subsequently it became slightly green in colour. She appeared to be a particularly healthy woman for 70 years of age, but her pulse was slow and feeble, and she complained also of feeling faint and exhausted.

We looked upon the case as one of acute obstruction, and considering the uncertainty of its succesful issue if left alone, and the great probability that at this early period of the obstruction the stone would still be movable and could be pushed through the ileo-cæcal valve, we proposed to proceed at once to laparotomy. We were not unmindful of the fact that many cases of long-continued obstruction are eventually relieved by the passage of the gall-stone, but we thought that in such an elderly subject, should an operation become necessary when her strength had already been severely tried, recovery would be hopeless. The difficulties of the decision were fairly placed before the patient's friends, and they decided to let us do what we had proposed.

Mr. Gordon Phillips, who had kindly answered Mr. Harvey's summons, gave chloroform, and Mr. Harvey assisted me in the operation.

The abdomen having been opened in the middle line below the umbilicus by an incision from 3 to 4 inches in length, the stone was immediately felt and the loop of intestine which contained it withdrawn. The walls were much swollen and congested, but the stone, although it tightly fitted the lumen of the intestine, could be forced along by a squeezing action of the thumb and finger. The point of importance at this moment was to find the ileo-cæcal valve, so as to know in which direction to force the calculus, for there was no marked difference between the part above and that below the seat of obstruction. This was, I should imagine, due to the early period of the operation and the persistent character of the vomiting; the latter had probably prevented the distension of the part above the calculus, a condition so frequently seen in the later stages of obstruction. Keeping, therefore, the loop of intestine in the same position, the hand was introduced towards the right iliac fossa. The cæcum was then easily recognised by its appendix and the valve by its rigidity. Tracing this onwards in the direction of the ileum, it was found that the loop containing the calculus was not more than 8 inches from ileo-cæcal valve, and that the stone, which was pyramidal in shape, had its apex directed towards the valve.

There was not much difficulty in urging the calculus in the right direction, but as soon as the ileo-cæcal valve was reached some considerable force was required to make it pass through into the cæcum. By placing my thumb on the base or flat end of the pyramidal stone, and my fingers on the other side of the valve, I was able eventually to overcome the obstruction, and the calculus rapidly slipped out of reach and was lost in the large intestine. As far as one was able to judge, only the last 12 to 18 inches of the ileum were swollen and congested.

Before closing the wound it was thought desirable to investigate a band which I had previously felt passing towards the pelvis. This I soon found was the mesentery of a large coil of small intestine, which I should imagine had habitually occupied the recto-vaginal and uterine pouch, for it was movable and in no way altered from a healthy appearance. The wound was closed in the ordinary way, and the patient returned to bed, the operation having been performed with all the usual aseptic precautions except the use of the spray.

The subsequent history is shortly told. There was no sickness whatever after the operation. The symptoms of obstruction were entirely relieved, and she slept soundly for most of the next twenty-four hours. The temperature rose to 101·6° and then sank to the normal. The calculus was passed *per anum* after a good deal of pain and several actions of the bowels on the morning of 31st, five days after the operation. All the sutures were removed by June 1, and the wound was soundly healed by the 7th.

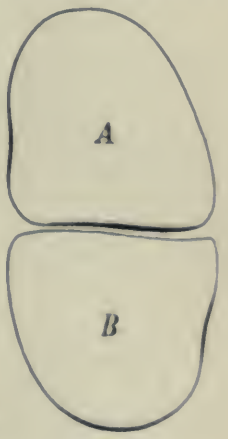


Fig 4.

The calculus measures 1¼ inches in length, 1 inch in the longest diameter of its base, $3\frac{4}{10}$ inches in its largest circumference, and is represented in the woodcut at B. The gall-stone, passed naturally fifteen months before, is represented at A (Fig. 4).

The strongest argument that can be used for such an early operation as was undertaken in this case is the fact that in nearly all the cases in which laparotomy has been performed for obstruction from gall-stone, the calculus has been found

quite immovable, and the intestine has had to be opened for its removal. In three out of the four cases of operation which I have found, by the help of *Neale's Digest*, in English literature, preceding that by Mr. Thomas Smith in the *Lancet* of December 3, the calculus has been found in the ileum at a short distance from the ileo-cæcal valve and the intestine at this point, and this alone, intensely congested and thickened. Mr. T. Smith does not record in his case the point of impaction. Mr. Treves also, in his admirable work on intestinal obstruction, states that an analysis of the recorded cases of obstruction from gall-stone shows that impaction most frequently takes place in the lowest part of the ileum.

The inferences obtained from these facts seem to me to be therefore of this nature, that the stone, when once it reaches the small intestine, generally travels safely down to the ileo-cæcal valve, and that, failing to pass this obstacle, it runs backwards and forwards in the lower part of the ileum, being propelled again and again against this obstruction to its progress till, finally, such a degree of inflammatory thickening of the intestinal wall is produced that it becomes permanently fixed within a short distance of the ileo-cæcal valve.

The natural objection to this theory is that sometimes, even after several weeks' obstruction, the stone has been successfully passed without any operation. But I think we must admit that there are varying degrees of this as of every other form of obstruction, *e. g.* some cases have been fatal in five days, whilst others have recovered after two or three weeks' obstruction.

The conclusion that one would therefore feel inclined to draw from this case is that the operation should be done early as it is almost certain that if the operation be performed late the intestine has to be opened in a most unfavorable condition. The patient is too weak for so long an operation as enterotomy entails, and the bowel is so thickened and inflamed as to be unlikely to heal without suppuration.

A hope may also, I think, be entertained that the stone will be found in most cases close to the ileo-cæcal valve quite early in the course of obstruction, for I imagine in a case like the one here recorded the first symptoms of intestinal obstruction arise only when the calculus reaches this part of the intestinal tract.

XIX.—*A Case of so-called "Idiopathic Dilatation of the Colon."* By Angel Money, M.D., and Stephen Paget. *Read January* 27, 1888.

THIS patient was first seen by Mr. Paget on September 13, suffering from enormous distension; he measured over 60 inches round, and 26 from the ensiform cartilage to the pubes. The whole abdomen was evenly distended, globular, extremely tense, and resonant or even tympanitic; there was no pain or tenderness, no movement or gurgling. The condition of his lungs was most alarming; nothing was heard but loud mucous râles; he was very livid, and his breathing was quick and shallow. He could just stand or walk a few steps with support. His history was as follows:—He was 55 years old, and for the last five years had been living alone, drinking incessantly both beer and spirits. The distension had been coming on for some months, but had become worse rapidly during the last week. He had all the aspects of an habitual drunkard, the typical nose and face, the arteries very tortuous and rigid, the legs œdematous, the urine high coloured, 1022, albuminous. His bowels had always acted regularly, though lately they had been somewhat constipated; they had acted freely the day before.

He was at once admitted to St. Thomas's Home, under Dr. Edmunds. A few hours later, his pulse was weaker and had risen from 100 to 120, and he was very livid, breathing badly. He was punctured in two places, letting off a very large quantity of gas. This reduced his girth from something over 60 to 53½ inches, and his measure between ensiform and pubes from 26 to 22 inches. His colour and breathing were immediately improved, and he at once fell fast asleep.

September 14.—The next day he was much better; breathing deeper and quieter, tongue moist. He was punctured again, reducing the girth to 50 and the vertical to 18 inches. The night after this he passed 154 oz. of water, free from albumen, pale and clear, 1012.

September 15.—An examination by the rectum showed no obstruction except piles. The bowels have not acted, nor can he pass wind as he used; the abdomen is becoming distended again.

September 16.—The distension is almost as bad as at first, girth 55, vertical 23 inches. To-day a soft rectal tube was passed, and a small quantity of gas and fæces escaped.

September 17.—An enema was given, which brought away only a small quantity of fæces, with some gas.

September 18.—He took five grains of calomel, followed by a seidlitz powder. These only produced a very small evacuation.

September 19.—He had an enema of soap and oil, a pint and a half; this was retained, and none of it returned. He was punctured again, letting off a very great quantity of gas, so that the abdomen became quite soft and loose. The girth was reduced from 56 to 51½ inches, the vertical from 25 to 21½ inches, the pulse fell from 104 to 96, and the breathing from 32 to 24, and he immediately fell fast asleep.

September 20.—The next day he was better,—so much better that he refused all further treatment, and insisted on leaving St. Thomas's Home.

He went back for a week to his old life of drunkenness, then he got delirium tremens, and was admitted into University College Hospital under Dr. Angel Money, with "enormous tympanites of the most extreme kind, associated with extreme dyspnœa, blue lips, nose, ears, and nail-beds, and general duskiness of the face and skin. He was in a state of mild alcholic delirium, constantly demanding cigars and brandy."

The resident medical officer, Dr. C. J. Arkle, and the house physician, Mr. Cyril Jecks, were most assiduous in their attentions to the patient, and succeeded in giving considerable relief to his most distressing dyspnœa by means of the long rectal tube, and later by the aid of a Ferguson's speculum, procuring a very voluminous discharge of flatus and gruel-like matter. But despite all efforts the patient sank and died, doubtless from a combination of causes, among which may be reckoned exhaustion from delirium and asphyxia from bronchitis and abdominal distension.

At the necropsy the enormous distension was still found to be present, and to be clearly due to dilatation of the colon. But it was not simply a uniform or moderate distension of every part of the colon; the dilatation of the sigmoid flexure took the lion's share in the enlargement, there being two large sacs, each far bigger than any ordinary dilated stomach; and these two sacs alone would have been sufficient to have caused a distension second only in degree to that distension from which the patient suffered.

The contents of these great sacs, and of the rest of the dilated colon, were chiefly a light brown, pultaceous, fermenting, and semi-fluid substance, which had the consistence of ordinary gruel. In addition to this semi-solid stuff there were accumulations of gas and of fluid; and, strange to say, at the hepatic flexure of the colon, which was not nearly so dilated as the rest of the large bowel, there was a big scybalous mass which presented in its stony hardness a curious contrast with the pultaceous subtance already mentioned.

The liver was extremely cirrhosed, and of a typical "hob-nail" character, pale, shrunk, weighing 72 oz.

The kidneys were hard, large, and granular; the urine, examined twice during life, was free from albumen.

The bladder was somewhat fasciculated. Heart was somewhat fatty. The arteries were markedly calcareous; the aorta was greatly dilated, atheromatous, and calcareous.

The brain was much wasted, the sulci being deep and the convolutions thin, the meninges were thickened, there was excess of subarachnoid fluid. Capsules of liver and spleen thickened, spleen harder than natural.

The small intestines were not dilated, but contained some bloody fluid. The rectum was moderately dilated. There was only slight ascites.

Remarks by Dr. Angel Money.

There was no organic constriction in any part of the bowel, nor any signs of piles. Any mechanical obstruction that may have existed must therefore have been of a removable sort, and I can only suggest that the anus may have been the seat of a spasmodic stricture, or that the twisting of the sigmoid flexure may have caused a potential and intermittent occlusion of the lumen of the bowel.

In addition to the dilatation of the cavity of the colon there was also considerable hypertrophy of its walls, which was especially evident in the three longitudinal muscular bands, but existed in the circular fibres also. The two conditions existed together, as they do in the heart; but it is doubtful whether, in the case of the bowel, there was first hypertrophy and then dilatation, or whether the two opposite conditions may not have been produced simultaneously. The hypertrophy was probably due to some kind of mechanical resistance near the last part of the bowel, about the rectum or anus. It is conceivable that a morbid condition of the blood

may have tended not only to cause atony of the muscular coats of the large bowel, but possibly also hypertrophy. Again, it is possible that the nervous apparatus of the bowel may have been deranged, and this nervous derangement may in part have given rise to the disease of the colon.

And it does not seem to me impossible that the presence of an excess of gas in the bowel may have been a cause both of hypertrophy and of dilatation.

An interesting contribution to the literature of this subject has been made by Dr. Gee in the *St. Bartholomew's Hospital Reports*. He observes that "one kind of great and fatal tympanites is an extreme dilatation of the large intestine, in whole or in part . . . . The disease may be compared with a like dilatation, also idiopathic, which affects the œsophagus and the stomach."

He gives the case of a boy æt. 4½, who died of enormous distension of the colon, and I have seen two similar cases, also in children, both fatal. Dr. Gee refers to De Haen (*Rat. Med.*, iv, 3) and to the posthumous works of C. H. Parry (vol ii, p. 380), and Dr. Goodhart has reported a case in the fourteenth volume of the *Transactions* of this Society.

XX.—*A Case of Embolism of the Right Axillary Artery, connected with Mitral Stenosis: Gangrene of the Forearm: Amputation: Subsequent Embolic Pleuro-pneumonia and Death.* By I. Burney Yeo, M.D. *Read January* 27, 1888.

On December 29, 1886, a woman, æt. 33, was admitted into one of my beds in King's College Hospital complaining of great pain and loss of power in the right hand and arm.

She stated she was a box maker, living in Compton Street, Soho. She was married, and had had five children, three of whom were alive. There was nothing calling for special notice in her family history. She had rheumatic fever when she was fourteen years of age, and had suffered from winter cough for some years. She suffered from sore-throat occasionally, and had had two miscarriages.

Her present illness had begun on December 24, when she felt ill and weak, and had an attack of giddiness associated with dyspnœa and pain at the heart. On the 29th, while sitting quietly in a chair, she suddenly became giddy, and felt "as if the ceiling was coming down" on her head; then she had severe shooting pains down the right arm extending to the hand and fingers. The fingers, hand, and forearm, on the right side, rapidly became *white*, and soon there was complete loss of motion and sensation in them.

She was quite well before the attack, quite free from cardiac pain or discomfort, although she had always suffered somewhat from dyspnœa. She was a tall, stout, muscular woman of fair complexion.

At the time of her admission into the hospital she complained of severe pain shooting down the right arm and hand into the fingers. The fingers, hand, and forearm, nearly up to the elbow, were cold and white, and without motion or sensation. There was no pulsation to be felt in the radial, ulnar, or brachial arteries, and it was doubtful if there was any in the axillary. Pulsation could, however, be detected in the subclavian. On the left side the pulse was exceedingly weak and irregular, and so rapid that it could not be counted. Tongue moist and fairly clean. Respirations 28. The temperature on admission was too low to be taken.

In the evening it rose to 98° F. Heart's impulse and sounds were very feeble, and its action extremely rapid and irregular. No murmur could be distinctly recognised. Cardiac dulness was not increased. Chest expansion was not good, and rhonchi and scattered mucous râles were heard over both lungs, but there was no dulness on percussion anywhere over them. Hepatic dulness appeared to be somewhat increased. Urine acid, sp. gr. 1026, high coloured, loaded with lithates, but free from albumen. There was some cough, and much dyspnœa with distressing restlessness and want of sleep.

December 30.—She had had no sleep. The hand was somewhat swollen, and she complained of feeling "pins and needles" in the arms. She was seen by my colleague Dr. Beale as I was absent in Paris, and he ordered the limb to be wrapped in cotton wool, 5 grains of carbonate of ammonia to be given every hour, and a draught of bromide of potassium and morphia at night.

December 31.—Much pain in the forearm, which had now become blue and mottled. The pulse in the other radial artery was still too rapid to be counted. She had only had one hour's sleep. The sedative draught was repeated, and in the evening an opium pill was given.

January 1.—Forearm blue, livid, mottled up to the elbow. Pulse very rapid, irregular, and intermittent. Rather less pain in the arm.

January 2.—Arm very painful all day.

On January 4, I saw the patient for the first time. There was then commencing dry gangrene of the right forearm, hand, and fingers, which were nearly black, cold, and shrunken. The pulse was very rapid, about 150. The cardiac sounds were very feeble, and the rhythm most irregular. She had had a bad night, and complained much of pains in the affected limb. Temp. 101°. She was ordered 2 grains of quinine, 20 minims of tincture of perchloride of iron, and 20 minims of spirit of chloroform, every three hours.

On January 5, the pulse was rather better, 132, irregular, and intermittent. The face, which had been very pale, was of a better colour. There was a line of demarcation visible round the forearm about 2 inches below the elbow. The heart's impulse was stronger, and now a distinct though faint murmur was to be heard at the apex, which appeared to precede the impulse. This fact, taken together with the high position of the apex-beat and the absence of any evidence of

ventricular hypertrophy in so robust a subject, together with the very small and irregular pulse, led me to conclude that it was a case of *mitral* stenosis, and that the clot had proceeded from the left auricle.

January 6.—Still suffering much pain in arm, which prevents her from sleeping. Discolouration extending to elbow.

January 7.—On this day I asked Sir Joseph Lister to see the case with me. The pulse had somewhat improved in strength, and was reduced in frequency to 120. But she was very restless, and there was a good deal of dyspnœa and cough, and rhonchi were still audible over both lungs. The fingers were dark brown, dry, and shrunken. The arm was livid and dusky up to the elbow; above the elbow the duskiness gradually faded away. No pulsation could be felt either in the axillary or the subclavian on the right side, and as there was some doubt as to the condition of the subclavian it was agreed to give 1-drachm doses of infusion of digitalis every four hours to steady and strengthen the action of the heart, and then see the following day if any pulsation could be detected in the subclavian. The arm, by Sir J. Lister's wish, was washed with carbolic (1 in 20) and sublimate (1 in 500) solution, and wrapped up in sublimate wool in order to prevent any putrefaction should the epidermis become broken owing to the formation of blebs or otherwise.

The next day, January 8, the heart's impulse had decidedly improved (since the digitalis), and distinct pulsation could now be felt in the right subclavian, but none in the axillary artery. It was now necessary to give her a hypodermic injection of morphia to relieve her pain.

On the 9th she had had a good night. The heart's action was stronger and less irregular. The murmur preceding the systolic impulse was now clearly audible.

The digitalis, 1-drachm doses of the infusion three times a day, and hypodermic injections of morphine at night to relieve pain, were continued till the 13th with decided improvement in her general state. The heart's impulse became stronger, the pulse steadier and more regular, 120, and there was a marked increase of bodily strength. The cough and dyspnœa were, however, troublesome. The fingers were more dried up and shrunken, and the line of demarcation below the elbow was more marked. As her general condition had so much improved Sir J. Lister determined to amputate the arm on the following day.

January 14.—The patient by this time had rallied considerably from the shock of the grave accident of which she had been the subject, and the cardiac tone, under the influence of the cardiac and general tonics she had been taking, had especially improved; it was therefore determined to bring her slowly under the influence of chloroform and remove the now dead forearm by amputation. She bore the chloroform extremely well. I kept my finger on her pulse during nearly the whole time of its administration, and found that it improved in force and volume as she passed under the influence of the anæsthetic.

Sir Joseph Lister, after applying an elastic bandage to the upper part of the arm, amputated the limb about the middle of its upper half.

January 15.—The patient bore the operation exceedingly well, and with the help of a hypodermic injection of morphia slept well the following night. She had no sickness, and expressed herself as feeling better and quite comfortable. She was free from pain, and her cough was rather better, but she expectorated a good deal of frothy mucus. The wound when dressed was found to be quite healthy. In the evening her temperature rose to 102·8°, but fell the next day, January 16, to 100° and 101° (evening). She was quite comfortable, and the pulse was good.

January 17.—The next day, however, her temperature rose steadily and reached 104·4° (6 p.m.), and she began to complain of pain in the right side. On examining the right side, which was a little difficult on account of the dressings, there was certainly some dulness on percussion over the lower lobe of the right lung; there were little or no respiratory sounds over this lobe, and I thought I detected distinct pleuritic friction in the mid-axillary region. It was obviously undesirable to submit her to a too detailed physical examination, but it appeared clear that she had developed an attack of acute pleuritis on the right side. Hot linseed poultices relieved the pain in the side. The wound was dressed, and looked quite healthy.

January 18.—The temperature fell in the morning nearly to normal; she expressed herself as feeling better; her breathing was easier and freer from pain, but the pulse was not so good, and her expectoration was deeply stained with blood.

Between twelve and one on the morning of the 19th she was observed to be breathing very noisily in her sleep, as if from the accumulation of mucus in the air passages. She

was roused, restoratives were administered, ether was injected, but without avail. She died a few minutes after one on that morning.

On post-mortem examination both cavities of the right heart were found dilated. Clinging to the tricuspid valve there were two or three long, narrow pieces of *old* blood-clot. No lesion of the tricuspid or pulmonary valves. The aortic valves and the left ventricle were normal. The edges of the mitral valve were thickened and the orifice contracted, just admitting the tips of two fingers. A few fragments of old clot were found clinging to the valve, on removing which a chain of small vegetations were seen on the line of contact of the valves.

The *left auricle* was much dilated and full of recent clot, but a *large, old, and firm clot,* from which no doubt the embolus in the artery sprang, was found in the auricular appendage. This appendage was much dilated and stuffed with a clot which was quite firm, brownish red externally, but soft on section. This clot projected, by a smooth rounded extremity, from the appendix into the auricle.

In the *right* pleural cavity there were about 30 oz. of serum, turbid with lymph. Near the base of the lung, and about the axillary region, there was a large hæmorrhagic infarction, still red, and the pleura covering it was thickly coated with lymph.

There were also about 20 oz. of pleuritic fluid in the left pleural cavity, and in the left lung one or two similar infarctions to that in the right but smaller.

Liver enlarged and showing the usual nutmeg appearance on section. In the kidneys there were several old, small, white infarctions, and a deep depression on the surface of one kidney, pointing to an old infarction which had atrophied and contracted. There was a well-marked old plug in the *basilar* artery.

As to the condition of the stump, the primary clot in the artery was found about 4 inches above the amputation just where the subclavian artery becomes axillary. It was pinkish and nearly discoloured, and about 1½ to 2 inches in length. Below, the artery appeared to be free from clot. The clot was slightly attached to the wall of the artery by a few fine shreds.

In the vein, what appeared to be the primary clot was almost on a level with the primary clot in the artery, and Sir J. Lister thought it was due to an extension of the inflamma-

tion around the clot in the artery to the vein. The clot in the vein appeared to be old, but was much more deeply coloured than that in the artery. It was attached to the wall of the vein. The pale colour of the clot extended about an inch, and then gradually merged into darker-coloured clot extending down the arm and forearm. *About an inch above the primary* clot in the vein there was a detached piece of old clot. This Sir J. Lister thought was due to detachment of a portion of the clot from manipulation or compression of the arm in connection with the operation. There was much inflammatory thickening round the vessels. A large branch was given off from the subclavian artery just above the top of the clot.

Remarks.—This case presents several points of interest. In the first place it is a rare instance of a grave and fatal accident resulting in a very direct manner from mitral obstructive disease. The source of this large embolus is also interesting. It was not apparently a concretion or vegetation attached to the valve itself and washed away by the blood-current, but a portion of a very large old clot which had formed in the auricular appendix from blood *stasis* in that portion of the auricle. The presence of old embolic infarctions in the kidney, and also in the basilar artery, shows that detachments of portions of possibly the same clot had been taking place for some time previously.

Secondly, the actual condition of the heart, and the probable mode of origin of the embolus, was suggested by the physical signs observed during life.

The absence of any signs of hypertrophy of the left side of the heart, and the rather high position of the apex-beat, together with the position of the murmur in the cardiac rhythm, although at first not very characteristic owing to the rapidity and irregularity of the cardiac action, all pointed to obstructive rather than regurgitant mitral disease, while the necessarily large size of the embolus pointed rather to its proceeding from a clot within the auricle than to a vegetation detached from the diseased valve.

Another point noticed during life was that, after the administration of a few small doses of digitalis, with a view of developing pulsation in the right subclavian if that vessel were not blocked, the energy of the ventricular impulse was quite out of proportion to the small weak pulse, and the inference from this was that the ventricular muscle was healthy and vigorous, and that the smallness and feebleness

of the pulse were due to the small amount of blood capable of entering the ventricle through a very much narrowed mitral orifice.

This inference removed any hesitation in the administration of chloroform, and Sir J. Lister predicted with confidence that there was no danger to be feared from its use; and that is another point of interest in this case; for, notwithstanding the great obstruction to the circulation caused by the stenotic mitral valve, the action of the heart improved and the pulse became stronger during the administration of the chloroform.

Then, so far as the operation was concerned, it was quite successful, and the patient suffered no shock from it; but with regard to the fatal attack of pulmonary embolism and pleuritis, it is a question whether that was not brought about by the operation. Indeed, Sir J. Lister suggested that the application of an elastic bandage over the upper arm, and the manipulation necessitated by the operation, probably led to the detachment of a portion of the clot in the axillary vein, and that this may have been carried into the pulmonary circulation and so caused the fatal lung attack.

XXI.—*A Case of Tricuspid and Mitral Stenosis in which physical signs of Pulmonary Arterial Reflux were present.* By Sir Dyce Duckworth, M.D. *Read January* 27, 1888.

Mary S., æt. 23, a fancy box-maker, married three years, without family, was admitted to Elizabeth Ward in St. Bartholomew's Hospital under my care on May 31, 1887, suffering from general dropsy and dyspnœa. She had had scarlet fever at the age of five years, but never rheumatism or chorea. She remembered suffering from short breath on exertion when fourteen years old. For twelve months past she had been particularly subject to dyspnœa, palpitation, and sickness. Three months previously she caught cold and had been worse since. Dropsy began in the legs, and was next noticed in the face, then in the belly.

On admission, the face was very dusky and bloated. Extremities cold. No clubbing of nose or finger-ends. Jugular veins slightly full. Tongue furred. Pulse barely perceptible, irregular, 128 per minute. The heart's impulse was diffused, maximum distinctness of apex-beat in left fifth space in nipple-line, but impulse felt indistinctly an inch outside this point. Well-marked præsystolic thrill over left ventricle. Præcordial dulness began at fourth rib and extended to right beyond middle line of sternum. At the apex a præsystolic murmur was heard, followed by a systolic one not traceable into axilla. Over the tricuspid area a systolic murmur was also heard. The pulmonary second sound was accentuated. Hepatic dulness began at fourth right interspace, and the lower edge of the liver was felt indistinctly about 2 inches above umbilicus. Spleen not palpable. Over the lungs was some impairment of resonance at the base, with feeble respiratory murmur and crepitation. The urine was of sp. gr. 1025, deposited urates, and contained one fourth of albumen. The temperature was 98·2°. The legs were cold, very œdematous and dusky, with scattered purpuric spots.

She was ordered light diet, with 2 oz. of brandy; tincture of cannabis indica and spirit of chloroform, and compound jalap powder were given as medicines. After four days tinc-

ture of digitalis was prescribed in ten-minim doses with spirit of nitrous ether. Subsequently iron and digitalis were given. The heart's action became more regular, and the dropsy diminished. The albumen was reduced to one tenth. Early in July she was able to sit up in the afternoon. The physical signs remained much the same in respect of all the organs. A diastolic murmur was now heard at the left of the sternum in the area of the pulmonary artery. The præsystolic murmur was audible, followed by sudden first sound passing into systolic murmur, the pulse being 88 in the minute. The second sound was clear over the aortic area. The systolic murmur in the tricuspid area became more distinct, and was distinguishable from that in the mitral area. The albumen disappeared from the urine. The temperature remained subnormal often being as low as 96·4°. On July 27 and 28 it rose to 101° and 100·4° without any noticeable symptoms.

When the cardiac action had calmed down, a second centre of slightly marked præsystolic thrill was detected over the third and fourth left cartilages, and on auscultation a præsystolic murmur was faintly heard. This I was disposed to attribute to stenosis of the tricuspid valve. It was readily distinguishable from the diastolic murmur in the pulmonary arterial area, which was also conducted down the sternum. I therefore headed the board "Morbus cordis, mitral and tricuspid stenosis, pulmonary reflux." With rest and treatment the patient was much relieved, and left the hospital on August 14.

On September 8 she was readmitted, having speedily relapsed, and begun again to suffer from dyspnœa, cough, headache, and sleeplessness. Four days previously she coughed up some blood. The cardiac physical signs were unaltered. The pulse was 118, small, and regular, and the temperature subnormal. The urine contained a cloud of albumen. Digitalis was again given with nux vomica and iron, and 4 oz. of brandy were ordered daily. The sleeplessness called for morphia, cannabis indica, and ether. She did not respond to treatment. The urine became more albuminous, the pulse irregular. Later on the symptoms were aggravated by the prevalent fogs. On October 29 the temperature rose to 102°, and there was increase of dyspnœa with cough and muco-purulent sputa. There were signs of congestion at the base of the left lung, and increased hepatic engorgement with some jaundice. Blue pill, digitalis, and squill pill was now given each night, and for the gastro-enteric

catarrh tartrate of sodium draught was ordered. The sputa became bloody, apparently indicating pulmonary embolism. At this time the signs of reflux through the pulmonary artery disappeared. Death occurred on November 8. The body was examined next day.

The heart extended considerably across the mesial line. The apex was 2 inches beyond the line of left nipple. The heart was much enlarged and weighed 24 oz. Wall of right ventricle firm and somewhat thickened. Cavity of right ventricle much dilated, especially at the conus arteriosus. Tricuspid orifice markedly stenosed, barely admitting two fingers. Edges of the valve thickened and somewhat roughened. Pulmonary valves not definitely diseased. Corpora Arantii apparently larger than usual. Left auricle much dilated and rather thick. Mitral orifice, "button-hole" contraction, barely admitting little finger. Chordæ tendineæ much thickened. Left ventricle decidedly hypertrophied. Aortic valves doubtfully thickened. Pulmonary artery dilated. No ante-mortem clots.

On the right lung was some recent inflammatory lymph at the base in front. In right lower lobe a patch of consolidation, size of a small orange, red hepatization. Rest of lung much congested. Left lung much engorged. No infarcts found in branches of pulmonary artery. A good deal of clear fluid in abdomen. Liver "nutmeg," with increased growth of connective tissue. Spleen and kidneys small, hard, and engorged.

The points of interest in the case relate to its etiology, and to two of the physical signs observed during life. The frequent occurrence of mitral stenosis in women without history of rheumatic antecedents is well recognised. The mitral affection may have supervened on scarlet fever. In many of these cases, however, I believe that rheumatic valvulitis is often the starting-point, the articular symptoms being slight and unrecognised in early life. The suspicion of tricuspid stenosis was verified by the disease of that valve discovered after death. Had life been prolonged, it is not unlikely that further involvement of this valve would have occurred. Tricuspid stenosis is hardly recognised during life; when it occurs there is usually accompanying mitral stenosis. The pulmonary reflux must have been due to the dilatation of the pulmonary artery, which entailed insufficiency of its valves. When the blood-pressure became low this sign disappeared.

It is open to comment that signs of increased pulmonary

arterial pressure existed when tricuspid reflux was established. This is hardly to be expected. I have, however, on several occasions noted accentuation of pulmonary second sound, together with signs of tricuspid regurgitation and mitral disease.

(The heart was exhibited.)

XXII.—*A Case of Disease of the Aortic and Mitral Valves of fifty-four years' duration.* Originally under the care of the late Sir Thomas Watson. By J. K. Fowler, M.D. *Read January* 27, 1888.

G. J., æt. 66, a wood-turner, attended as an out-patient at the Middlesex Hospital on Nov. 1, 1887, complaining of pain in the epigastrium.

The patient is a slightly built and rather feeble-looking man with grey hair; his aspect is anæmic, the face is marked by many dilated vessels, and the tissues below the lower lids are œdematous.

The chest is small; the sternum is covered with a good deal of white hair, and there are numerous old scars of leech bites over the region of the heart.

There is a noticeable systolic recession of the epigastrium to the left of the ensiform cartilage, and also in the fifth and sixth interspaces. The cardiac apex-beat is felt in the fifth interspace in the nipple line, the impulse is forcible and indicates the presence of a considerable amount of hypertrophy of the left ventricle. The pulse is 84, small, collapsing, and occasionally intermittent. On raising the hand above the head the collapsing character becomes more marked. The arteries are tortuous, and locomotor at the bend of the elbow. The area of precordial dulness has its upper level at the fourth costal cartilage and is somewhat increased, as it extends beyond the mid-sternal line at the level of the apex-beat. The area of precordial dulness is not diminished during inspiration, but the amount of expansion of the chest generally is small. At the base of the heart the first sound is replaced by a short systolic murmur conducted upwards to the episternal notch, but not audible in the vessels of the neck. The second sound is replaced by a rather rough diastolic murmur conducted down to the left edge of the sternum, but not audible at the apex, where a systolic mitral murmur is present, this latter sound being distinct in the axilla, and at the angle of the left scapula. The right ventricle appears to be somewhat hypertrophied, but there are no abnormal sounds indicating incompetence of the valves on the right side of the heart.

There is no evidence of pulmonary congestion or bronchia catarrh. The urine is free from albumen.

During the last fifty-three years he has worked a treadle lathe as a wood-turner; he has enjoyed good health, having only been laid up on one occasion for a day or two with a slight cold. He has not noticed any shortness of breath on exertion. His habits have been temperate, he has taken a moderate quantity of beer daily, and has smoked a good deal. His family have not been usually long-lived or exceptionally vigorous.

The physical signs just given indicate that there is a moderate degree of narrowing of the aortic orifice, and that the aortic and mitral valves are incompetent. The enlarged area of precordial dulness with the well-marked systolic recession of the epigastrium and fifth and sixth interspaces, suggest, but do not prove, that there are adhesions between the surfaces of the pericardium.

The interest of this case arises from the fact that in 1834, fifty-four years ago, the patient, then a boy æt. 13, was admitted into the Middlesex Hospital under Dr. (afterwards Sir) Thomas Watson, with an attack of acute rheumatism, for which he remained under treatment nine months. During the early part of his illness active local measures were adopted, as he states that leeches were applied more than a dozen times, occasionally as many as thirteen at a time. During the later stages of his illness blisters were frequently used to the precordial region. After three months he was on a certain Tuesday discharged as convalescent, but on the following Thursday was readmitted with a relapse of the rheumatic symptoms, and remained in hospital for a further period of six months.

The evidence on which I think we may conclude that the lesions now present occurred during the illness in 1834 is entirely circumstantial, as our records at the Middlesex Hospital do not go back further than the year 1840. The fact that he was submitted to such active local treatment makes it probable that he was believed to be suffering from pericarditis, but this and the possible adhesion of the pericardium is of course open to question. As regards the valve lesions the evidence is more satisfactory. The patient states that on one occasion Dr. Watson was accompanied by some gentlemen, one of whom, after listening to the heart with a stethoscope, said that he heard a sound like "an old woman blowing a bellows in a back room," whilst another said that it was "like

the whistling of a steam engine." He has no recollection of any remark made by Dr. Watson.

On his discharge from hospital Dr. Watson told his mother that he was not to leave home without letting her know where he was going; this he usually did, and for three years he carried with him a card on which were written his name and address, so that if anything happened to him suddenly in the street he might be recognised and taken home. There is also the important fact that since that illness he has enjoyed good health and has had no return of the rheumatic symptoms.

I have thought this case worthy of the notice of the Society, as it is a rather remarkable example of a class to which the attention of the profession has been drawn by the writings of our President (Dr. Broadbent), and of Sir Andrew Clark and others. There can, I think, be little doubt that this is a case of valve disease of rheumatic origin, in which compensation has been established, has remained perfect for fifty-eight years, and still shows no signs of failure. The symptoms of valvular disease depend upon failure of compensation; here there has been no failure, and consequently there have been no symptoms. It is an interesting coincidence that at the time this patient was under Dr. Watson's care he gave two lectures to the students of the Middlesex Hospital on the subject of rheumatism of the heart; these lectures are to be found in the *London Medical Gazette*, vol. xvi, and they form the substance of Lecture 55 in his 'Principles and Practice of Physic' first delivered in 1836-37.

Postscript.—The patient whose case is described above was admitted into the Middlesex Hospital under the care of my colleague, Dr. Sidney Coupland, on March 27, and died on May 27, 1888. At the autopsy the condition of the heart was shortly as follows:—The surfaces of the pericardium were universally adherent. The heart weighed 20½ ozs. The left auricle and appendix were dilated, the edges of the mitral flaps were much thickened; two of the chordæ contained calcareous deposits in their substance; the orifice was narrowed and the valve incompetent. The left ventricle was hypertrophied and dilated. The free margins of the aortic cusps were thickened, deformed, and contracted, so as to produce a slight narrowing of the orifice, and to permit of a moderate amount of regurgitation. There were numerous calcareous plates in the aorta. The kidneys were granular on the surface, and

the cortex contained some cysts. It will be seen that the conditions present at the post-mortem examination fully bear out the description of the patient's state as given in the paper —briefly this was mitral and aortic valves incompetent, pericardial surfaces adherent.

XXIII.—*Ruptured Intestine without external wound: its Diagnosis and Treatment: with illustrative Cases.*

By A. W. Mayo Robson. *Read February* 10, 1888.

In the interesting oration by Sir William Mac Cormac, delivered May 2, 1887, before the Medical Society of London, on "Abdominal Section for the Treatment of Intra-peritoneal Injury," he gives a table of all the cases which he could find recorded, of abdominal section performed for supposed traumatic rupture of the intestine or other abdominal viscera, without any external wound. The cases are twelve in number, all fatal, although one of Mr. Croft's survived the primary operation a month. This table brought to my mind a case of enterorraphy which I performed in October, 1886, for traumatic rupture of the bowel, which is not included in that list; and as, since that date, I have had three other cases of intra-abdominal injury without external wound under my care at the Leeds Infirmary, in which the question of laparotomy has been raised, I venture to bring them forward collectively, in the hope that their careful consideration and comparison may help to elucidate a difficult and important subject. By the kindness of my colleagues Mr. E. Atkinson and Mr. Ward, I have been permitted to incorporate in this paper two of their cases, in one of which enterorraphy was performed.

The cases, for the notes of which I have to thank my house surgeon, Mr. A. H. Smith, are as follows:

Case 1. *Laparotomy for ruptured intestine.*—J. P., æt. 24, a boiler maker, attended at the infirmary as a casualty patient on the morning of October 29, 1886, for a wound over the left eye and bruising of the elbows, which he said had been caused by a fall from a height of about ten feet. He stated that he had been unconscious for a few minutes, after which he felt well enough to walk to the infirmary, a distance of nearly two miles; he made no complaint of abdominal injury, and after his wounds had been dressed he walked home. In the afternoon a friend came to say that the patient had severe pain in the abdomen and was vomiting. He was

advised to bring him at once to the infirmary. On admission he was sick, and vomited occasionally; the abdomen was tender on palpation, and slightly distended, but there was no external sign of bruising. The urine was passed naturally and was normal in every respect. The vomited material was bilious and contained no blood. Nothing had passed the bowels since the accident.

October 30.—He had slept badly during the night. The vomiting continued from time to time. The abdomen was rather tympanitic, but there was no dulness in the flanks, and no spot more tender than another. The urine was passed normally. Morphia was injected to relieve his symptoms. Turpentine was applied externally and an enema given.

October 31.—The vomiting having continued, the tympanites being unrelieved by the long tube which was passed 18 inches, and no passage of either flatus or fæces having occurred, a consultation was called with a view to laparotomy, it being thought that there must be either ruptured intestine or some acute obstruction of the bowels. The patient looked pinched and anxious, and the pulse was becoming more frequent. He was evidently "running down."

At 9 P.M. laparotomy was performed by an incision in the linea alba below the umbilicus. On opening the peritoneum a quantity of blood-stained fluid escaped, and after searching for some time a rent was found in the small intestine about ¾ inch long, which had only gone through the serous and muscular coats; this was carefully brought together by six Lembert's silk sutures. On exploring to the left, a mass of matted intestine was found around a complete rupture of the bowel, the adjoining parts being coated with liquid fæces. As this could not be reached through the central opening, an incision was made external to the left linea similunaris, on a level with the umbilicus, exposing a rent of an inch in the small intestine; this was brought to the surface, and the edges were sutured to the lateral abdominal incision. After the peritoneum had been thoroughly cleansed with boracic solution, the anterior wound was closed, a Bantock's tube being left in. The patient died from shock in two hours.

Autopsy.—The artificial anus was found to be two feet from the pylorus; the incomplete rupture which had been sutured was a little lower in the canal.

Acute peritonitis was present, the small gut being of a deep red colour and adherent in parts; some fluid was present in the flanks, but no pus.

Case 2. *Ruptured intestine.*—P. N., æt. 62, a carter, was admitted to the infirmary at 10 P.M. on December 27, 1886. Two hours before admission he was kicked by a horse over the left side of the lower part of the abdomen, the kick being followed by very severe pain and a feeling of sickness, but no loss of consciousness. On admission, there was slight bruising just above the pubes on the left side, and the left side of the scrotum was also bruised and swollen. The patient was not collapsed, and could bear manipulation of the abdomen, which was not distended, and not very tender or painful. He was warm and had a good full pulse. A catheter was passed, and normal urine drawn off. Some little time after admission he vomited the contents of the stomach and later had bilious vomiting; he had very little sleep but could lie in any position and could sit up.

At 10.30 A.M. of the following day the abdomen was distended and becoming typanitic; the abdominal walls were rigid, but the patient could lie in any position, and the legs were not drawn up. Liver dulness was diminished. Temperature in axilla 99·6°. Pulse firm and regular. He was thirsty. At noon he felt chilly; at 1.30 he vomited. He then complained of loss of power and sensation in the left leg. At 2 P.M. the skin became cold and clammy, and he rapidly became worse, and died collapsed at 4.35, eighteen and a half hours after admission, and twenty and a half hours after the accident.

Autopsy.—The peritoneum was intensely congested and the sac contained fluid stained by fæces. Six feet up from the ileo-cæcal valve was a laceration of the intestine rather more than ¼ inch in diameter, the edges being thick and everted. Gas bubbled freely through the opening when pressure was made on the bowel above and below. The position of the lacerated gut was exactly opposite the site of the kick. There was crepitation over the left inguinal region, due to gas and fluid in the empty sac of an old inguinal hernia.

Case 3. *Ruptured intestine*—E. A., æt. 17, groom, was admitted May 17, 1887, at 8.30 P.M. He stated that he was standing on a dog kennel when he slipped and fell, striking his abdomen on the ridge of the roof. He felt faint and sick at the time, but with a little assistance was able to walk to the infirmary, a distance of over a mile.

On admission, he was pale and looked anxious, had a cold

clammy skin, and feeble pulse, but on being put to bed with hot-water bottles and blankets round him, he improved considerably, vomited the stomach contents, which contained no blood, and passed a considerable quantity of normal urine. He continued to complain of abdominal pain, not localized, until midnight, when he slept, and in the morning seemed much better although he had some pain. At 11 A.M. slight abdominal distension with tenderness was present; there was dulness with questionable fluctuation in the left lumbar region, but elsewhere resonance, and questionable hyper-resonance over the hepatic region; although the pulse had improved it was still over a hundred and very compressible; respiration was quickened. He had just vomited some bile but had passed flatus. Mr. Robson thought that there was probably rupture of the intestine and that laparotomy would be required, but the evidence of those who had seen him from the first as to the improvement of the patient's condition, made the diagnosis somewhat uncertain, hence it was decided that a consultation should be called in a few hours if no improvement occurred; in the meantime no morphia to be given unless absolutely necessary so as to avoid cloaking of symptoms.

The vomiting continuing, a consultation was called for 6 P.M.; but at 2 P.M. he became much worse, and during the momentary absence of the nurse got out of bed, after which he rapidly sank, dying at 5.50 P.M.

Autopsy (twenty-two hours after death) revealed a rupture of the convex surface of the commencement of the jejunum immediately beyond its fixed part; the rent was 1½ inches long by ½ inch wide, the margin consisting of everted mucous membrane. The peritoneal cavity contained gas and a large quantity of thin pea-soup fluid and fæces. The folds of small intestine were in many places adherent to one another and to the omentum, and covered with flaky lymph. The general peritoneal covering of the viscera was of a peculiar whitish cream colour.

Case 4. *Ruptured intestine.*—J. T., æt. 25, was admitted under the care of Mr. Ward on July 7, 1887, with the history of having fallen from a scaffold. On admission he was semi-comatose.

At 1.30 P.M. a catheter was passed and normal urine drawn off.

At 4 P.M. he seemed to be in great pain but was not fully

conscious. He was shouting violently and did not answer when spoken to. His face was pale, lips livid, and pulse feeble and intermittent. The temperature was 102° in the axilla. He placed his hand over the epigastrium as if it were the chief seat of pain, and from time to time vomited bile and mucus tinged with bile.

At 7.45 P.M. the vomiting continued, and he had distressing hiccough; there was epigastric fulness with absence of liver dulness, but the flanks were resonant. The pulse was 148, very feeble. A ¼ gr. of morphia was given subcutaneously at 8 P.M. He gradually became weaker and died at 5 A.M. on July 8. Although it was suspected that there was ruptured intestine, the presence of brain symptoms obscured the diagnosis and rendered the advisability of operation very questionable.

Autopsy (twelve hours after death).—On opening the abdomen offensive gas escaped, and a quantity of fluid fæces resembling pea-soup was found in the peritoneal cavity. The duodenum was torn completely across at its junction with the jejunum, the edge of the laceration being covered by the everted mucous membrane. There was general peritonitis, flaky, purulent lymph binding together the intestinal coils.

Case 5. *Enterorraphy for ruptured intestine.*—Charles B., æt. 28, was admitted under the care of Mr. Edward Atkinson on August 13, 1887, with the history of having been struck violently across the lower half of the abdomen. He was brought in an ambulance to the infirmary greatly collapsed. When in bed an hour afterwards (at 3.30 P.M.) he was still collapsed but conscious, lying on his back with his legs extended. His face was pale. Radial pulse just perceptible. Breathing slightly laboured and chiefly thoracic. Pain on palpation and percussion of abdomen. Abdominal walls retracted as if they had fallen in. Contusion of tissues in left inguinal region. Tenderness most marked in left inguinal and less so in umbilical and epigastric regions. Flanks resonant, but slight dulness on left side. Catheter passed and normal urine drawn off. No fracture made out. He vomited some undigested meat but there was no blood in the vomit.

At 5.45 P.M. the pulse had improved, and he was less collapsed after treatment by warmth and stimulants. He was clear and answered questions quickly. The breathing

was thoracic. The abdominal walls were rigid and there was great pain referred to the abdomen.

At 6.45 still in great pain; liver dulness present.

At 8 P.M. liver dulness had disappeared. Abdomen rigid. Urine passed voluntarily.

At 9.30, seen in consultation; laparotomy advised.

Operation at 10 P.M. After ether had been administered, the abdomen was opened in the usual manner, below the umbilicus. On incising the peritoneum bubbles of gas escaped with blood-stained fluid. The intestines, partly collapsed and partly distended, were traced in different directions, until a rupture, half an inch in extent, close to the attachment of the mesentery, was found in the jejunum, the mucous membrane being everted. Portions of intestine and mesentery adjoining the laceration were greatly ecchymosed, and in several places coils of bowel were glued together by recent lymph. The rupture was closed by six Lembert's sutures of chromicized gut. The abdomen was washed out with boracic lotion 2 per cent. Temperature 96°. Bantock's tube was inserted and the wound closed by wire sutures. The operation lasted an hour and a half. Patient recovered from the anæsthetic and fell asleep. Vomited during the night.

August 14, 9.30 A.M.—Vomited a little water. Pulse 100. Respiration 32. No distension of abdomen. No flatus passed. Morphia given.

10.55, vomited coffee-coloured material.

11.15, the drainage-tube was aspirated and 3 oz. of sanious fluid were withdrawn.

12.20 P.M., abdomen slightly distended. Pulse 136. Pain and hiccough.

August 15, 1.40 A.M.—Nutrient enema with brandy was given.

3.15 A.M., rectum tube passed allowing some flatus to escape. A subcutaneous ether injection was given.

At 12 noon, symptoms of peritonitis continuing, the abdomen was again opened and washed out with boracic solution.

At 4.20 he died quietly, having fully come round from the operation.

	Temperature.		Temperature
13th.—10.25 p.m. . .	98°	14th.— 8.10 . . .	99½°
14th.—12.30 (midnight) .	98½°	10.10 . . .	99½°
2.30 . . .	98½°	12.10 (noon) .	100½°
4.30 . . .	98½°	2 p.m. . .	101½°
6.30 . . .	100½°	4.10 . . .	101½°

	Temperature.		Temperature.
14th.—6.10 p.m. .	. 101°	15th.—4.25 . .	. 100¼°
8.10 . .	. 100¼°	6 . .	. 100¼°
10.10 . .	. 100¼°	8 . .	. 100¼°
12 (midnight)	. 100°	11.30 . .	. 101°
15th.—2 a.m. . .	. 101¼°		

Autopsy (sixteen hours after death).—Rigor mortis present. There was general peritonitis, more marked on the left than on the right side. Near the sigmoid flexure was a large patch of purulent matter, and the lymph in other places was also purulent. The odour given off from the abdomen was unpleasant, but no fæcal matter was found in the peritoneal cavity, which contained a little dark reddish-brown fluid. The site of the rupture was 18 inches below the duodenum. None of the sutures had given way, and the wound looked quite healthy, there being no signs of peritonitis in the neighbourhood. There was ecchymosis in the mesentery attached to the ruptured part of the intestine. On opening the bowel the laceration was seen to have been perfectly closed by the sutures, and the mucous surface around it was quite normal. No further injury was found in the rest of the intestinal tract. The upper surface of the liver was discoloured, possibly owing to the action of escaped gases, for the liver dulness was replaced by resonance within a few hours of the accident.

The following case is introduced for the sake of comparison :

Shock and other symptoms resembling intestinal rupture.—G. S., æt. 9, was brought to the infirmary directly after a heavy cart, containing 16 cwt. of goods, had passed over his abdomen.

On admission at 12 noon, he was conscious and complained of pain in the abdomen, his skin was cold and clammy, his face pale and lips rather livid; the pulse was feeble and intermittent, respiration shallow and gasping. He was put to bed, wrapped in a blanket, and had hot-water bottles applied to the feet and to the sides.

At 2 P.M. he complained of great abdominal pain, and lay on his back with the knees drawn up. He had great thirst and his respiration was still gasping and evidently painful.

At 5.30 P.M. there had been no vomiting; the abdomen was tympanitic although less tender, and the liver dulness was distinctly diminished. He was recovering from the

shock, the pulse being 120 and regular. His colour was returning and he lay with his legs stretched out.

At 9 P.M. Mr. Robson again saw him with a view to further treatment if relief had not occurred. The abdomen was then less tympanitic, the liver dulness had returned to the normal, flatus and urine had been passed, and the symptoms of shock were disappearing.

Next day he was still better, and he rapidly recovered without any other symptom worth recording.

This record serves to show:

(*a*) That in some cases of ruptured intestine the signs and symptoms are so distinct as to be almost pathognomonic of the injury which has been sustained, *e. g.* Cases 3 and 5.

(*b*) That other instances of abdominal injury, *e. g.* Case 6, may present most of the symptoms of ruptured intestine and yet clear up completely; the shock being due to disturbance of the sympathetic nervous system, and the diminished liver dulness, to distended intestines.

(*c*) That, as in Case 1, the usual symptoms may be entirely absent for a time, and may only become evident when inflammation has set in or when the patient is becoming rapidly collapsed by poisoning through peritoneal absorption.

(*d*) And that in other instances, *e. g.* Case 4, injury to different parts of the body may take off the attention from the abdomen and so lead to uncertainty or to a failure in diagnosis.

In discussing the diagnosis; the history, symptoms, and signs will be best considered separately, and then collectively.

The history may be very variable, for the accident may be either a simple blow, *e. g.* Case 5, or a fall of not more than 3 feet, as in Case 3, or of 10 feet or more, as in Cases 1 and 4, the cause acting either directly, as in Cases 5 and 2, where the ruptured bowel was found under the site of the kick, or indirectly, as in Cases 1, 3, and 4, where the bowel had given at its fixed part.

Shock is usually put down as the most important symptom. A consideration of these cases would seem to say that it is an entirely unreliable one and more dependent on the idiosyncrasy of the patient than the nature of his injury; for it may be present when there is no gross lesion, as in Case 6, and these would seem to correspond to the shock following a blow over the epigastrium. Or it may be entirely absent, as in Case 1, where although extensive lesions had occurred the

patient showed no marked signs of serious injury until after the lapse of some hours and after considerable exertion: or it may be severe at first and afterwards diminished, as in Case 5.

The *pulse* affords valuable help, since in any gross lesion it is usually intermittent, rapid, and feeble, but as this may also be the case where no rupture of bowel has occurred it is not an absolute guide.

Liver dulness, when normal, is almost proof of absence of perforating wound of alimentary canal; when diminished it is suspicious, but when absent it is almost pathognomonic of ruptured intestine.

Dulness in the flanks altering with the position of the patient and combined with resonance over the liver, whilst characteristic when present, is seldom seen, and was not observed in any of the cases given above.

Persistent vomiting was present in all the cases and is an almost constant symptom. In Case 1 it was combined with inability to pass flatus giving rise to the suspicion of strangulated bowel.

Pain over the abdomen was present in all the cases; it is an early symptom and always prominent, often being worse over the site of the injury.

Blood in the vomit or passed *per anum* is usually absent and was not seen in any of the cases.

Anxious countenance, rapid breathing, meteorism, dry tongue, dorsal decubitus with drawn-up knees and disinclination to be moved, are usually present earlier or later.

The combination of symptoms most to be relied on in arriving at a diagnosis would seem to be shock, more or less severe, following immediately or within a short time on an accident, pain in the abdomen, moderately quick and feeble pulse, vomiting of contents of stomach, followed by bilious vomit, anxious countenance, and diminished or *absent* liver dulness.

Chavasse, in a report of a series of cases, gives the mortality of ruptured intestine as 96 per cent., therefore on expectant or general treatment little reliance can be placed, and our only hope would seem to lie in early operation.

This being the case, it follows that a timely diagnosis is of vital importance; but in the present state of our knowledge this being very uncertain it would seem to be advisable that all cases of intra-abdominal injury should not only be accurately observed but fully reported, so that by com-

parison of symptoms in a large number of cases something more like certainty may be arrived at.

In cases of doubt one is so prone to wait, hoping for the turn of events, and then to arrange to operate when too late, that it is well to have some formulated rule, and for my own guidance I have adopted the following:—In cases where there is a reasonable belief that the intestine is wounded, as evidenced by the history, symptoms, and signs, exploration by a small median incision must be made, when if there is any rupture of the bowel; flatus, or serum tinged with blood or feculent material, will escape through the small peritoneal opening, which can then be enlarged and necessary treatment adopted; but should no flatus or fluid appear and the peritoneum prove to be healthy, the small wound can be closed and no harm will have been done.

The following table is Sir Wm. Mac Cormac's, amended by the addition of two of the cases reported in this paper.

Cases of Abdominal Section performed for Traumatic Rupture or Contusion of the Intestine and other Abdominal Viscera, without any External Wound.

No.	Operator and reference.	Age.	Time after injury.	Special symptoms.	Intra-peritoneal lesions found.	Treatment of intra-peritoneal wounds.	Result.	Remarks and post-mortem.
1	Bouilly, Bull. et Mém. Soc. de Chir., 1883, p. 690	29	23 hours	Signs of incipient peritonitis; fæcal vomiting	3-in. rupture of small intestine; also severe bruise of intestine above the rupture	Laparotomy; resection of 5 inches of the small intestine	Died in 10 days	Post-mortem: contused portion had given way after manipulation.
2	Chavasse, Bull. et Mém. Soc. de Chir., 1885, p. 123	23	—	Kicked by horse. Abdomen retracted. Shock from the first, then peritonitis, constipation, and vomiting	Colon badly contused in two places; intestine and mesocolon infiltrated with blood	Laparotomy; no suture required; peritoneal cavity cleansed and drained	Died in 6 days	Pancreas contused.
3	J. Croft, St. Thomas's (unpublished)	34	24 hours	Jumped upon by companions. Shock; peritonitis; no sign of external injury	Extravasation of fæces; rupture of lower part of ileum extending through ¾ of circumference	I. Laparotomy; wound of ileum sutured to abdominal wound; cavity washed out. Operation 1¼ hours	—	Recovered from first operation.
						II. Second operation 4 weeks later; bowel detached from abdominal wall; divided margins resected, and united by Lembert's suture. Operation 2¼ hours	Died in 26 hours	Post-mortem: lungs collapsed; no peritonitis; no fluid in abdomen; sutured intestine firmly united; did not yield on injection of water.
4	J. Croft, March 4, 1887 (unpublished)	25	13 hours	Run over by cab. Pain; shock; distension; evidence of loss of blood; pallor; fluid in flanks	Ruptured spleen; fractured ribs (8th and 9th)	Laparotomy; 1¼ to 2 pints of blood in cavity; spleen excised	Died same evening	Never recovered from shock. Post-mortem: no blood in abdominal cavity; no sign of peritonitis; clots in renal vessels.

5	Demons. Cong. Fr. de Chirurg., 1885	Male adult	—	Crushed between a cart wheel and the wall	Circular rupture of intestine diagnosed previous to operation	Laparotomy; Lembert's suture; cavity purified	Died	Post-mortem: another wound of intestine found.
6	Fitzgerald, Australian Medical Journ., 1883, p. 264	58	20 hours	All the signs of strangulated hernia. (His truss had been pressed violently against a descended hernia)	Ruptured small intestine	Laparotomy; wound sutured	Died in 8 hours	Author advises abdominal incision to be long enough to afford ready access to all parts of the cavity.
7	T. M. Girdlestone, Australian Medical Journ., 1883	22	4th day	Shock, which was followed by development of peritonitis; vomiting	Almost complete rupture of ileum; lacerations of omentum	Laparotomy; excision and suture of wounded bowel	Died in 1½ hours	—
8	Dr. Gregory, St. Louis, 1876 (unpublished)	—	—	—	Rupture of ileum	Laparotomy; suture	Died in 6 hours	Operation not undertaken till hope was almost gone.
9	A. O. Mackellar, March 21, 1887 (unpublished)	57	29 hours	Struck by shaft of cart. Collapse; pain; pallor; distension; dulness in both flanks	Ruptured spleen; fractured rib	Laparotomy performed after peritonitis; sutured; dark blood in cavity; irrigation; glass drainage-tube	Died 3rd day	Post-mortem: ruptured spleen, extra-peritoneal rupture of kidney, not into hilus, with infiltration of blood around those organs.
10	Edmund Owen, Lancet, 1885, ii	Adult	41 hours	Fell, while drunk, across a board placed edgeways. Shock; peritonitis; tympanites	Rent 1 inch in ileum	Intestine clamped and left outside to form an artificial anus	Died 6 hours after	No post-mortem.
11	E. A. Waggoner, St. Louis Cour. of Med., 1886, xvi, 204	8	27 hours	Walked 400 yards. Great shock; violent peritonitis soon followed	Rupture of intestine 2½ feet above the ileo-cæcal valve; much fæces in abdominal cavity	Laparotomy; wound sutured	Died in 2 hours	—

No.	Operator and reference.	Age.	Time after injury.	Special symptoms.	Intra-peritoneal lesions found.	Treatment of intra-peritoneal wounds.	Result.	Remarks and post-mortem.
12	Alfred Willett (unpublished)	32	Soon	While drunk he fell on his back from a van. Acute pain in epigastrium immediately followed; much collapse; bowels acted freely; vomiting constant; abdomen quickly became distended; emphysematous crackling round umbilicus	Peritoneal cavity full of blood; several pints drawn away; rupture of right lobe of the liver extending from the hilus	Laparotomy; abdomen cleared of blood, and wound in abdominal wall subsequently closed	Died 4 days after the injury	Post-mortem: a transverse rent of under surface of right lobe of liver was found; one large branch of the portal vein was torn; peritonitis was found only around the neighbourhood of the rupture.
13	Mayo Robson, Oct. 29, 1886	24	60 hours	Those of obstructed intestine	¾-inch laceration of jejunum at 3 feet from pylorus; also 1 inch laceration of jejunum at 2 feet from pylorus; peritonitis	Artificial anus made at the larger opening; the smaller opening closed by Lembert's sutures	Death from shock in 2 hours	Acute peritonitis.
14	Edward Atkinson, Aug. 13, 1887	28	9 hours	Shock, with absence of liver dulness	¾-inch laceration of jejunum	Enterorraphy by Lembert's sutures	Death from peritonitis 42 hours after operation	Peritonitis.

XXIV.—*A Case of Intestinal Obstruction in which the Colon gave way outside the Peritoneum.* By William H. Bennett. *Read February* 10, 1888.

On October 22, 1887, I was asked to see, in consultation with the family medical attendant, a gentleman approaching seventy years of age, who gave the following account of himself.

He had always been a remarkably strong man and had never been laid up by any illness for a single day excepting many years before when he had a bad attack of malarious fever in India. From this he recovered perfectly, but had been habitually constipated since, the bowels seldom acting more than twice a week and then only with the aid of medicine, which usually consisted of Pil. Rhei Co., of which he not infrequently took as many as eight or ten 5-grain pills at a dose.

For the past four or five years he had from time to time suffered from acute attacks of colic accompanied by great distension. For this he consulted a London physician who advised him to pass an œsophageal tube when these attacks occurred in order to empty the stomach, which was much dilated. This advice the patient acted upon with immense benefit.

During the month prior to my seeing him these attacks had been more frequent, and he had been failing somewhat in general health, at least so his family thought, although being a very reticent man he had made no particular complaint about himself.

On the 17th, five days before I saw him, he had a very acute attack of colic and flatulence, but was able to obtain relief by free use of his favourite pills. The symptoms, however, subsided less completely than usual, and on the following day returned with increased severity. The copious use of pills and other medicine now failed to give material relief, a very small, hard motion being the only result. On the 20th, although in much distress, and being entirely unable to defæcate in spite of a frequent urgent desire to do so, he came up to London from the country and transacted considerable business.

On his return home in the evening he again took more pills without any good effect. In the meantime the distension was increasing, and on the afternoon of the 21st, whilst stooping forward over a letter which he was writing, he felt a sudden acute pain across the belly, passing down into the left loin, accompanied by nausea and faintness, from which he soon apparently recovered. These symptoms he attributed to an unripe pear which he had eaten on the previous day.

Towards evening there was more pain and discomfort, and a medical man was called in, who found the patient in the following condition:—The countenance was not in any way anxious or distressed, the pulse was 100 and of good volume. The temperature was normal. There was no sickness. The belly was moderately distended but not at all tender. Under the region of the liver could be felt a hardish lump which was thought to be fæcal, and was said to have been moved on by manipulation. Copious enemata were resorted to, but nothing could be brought away. Opium was administered internally and various applications were applied to the abdomen without giving any relief to the discomfort.

On the following morning there was a manifest change for the worse and I was sent for.

On my arrival I found the patient lying flat in the bed with his thighs flexed on his belly. At intervals he moved the thighs up and down, as he said the movement gave him some temporary relief.

The face was pinched and anxious in aspect, there was an inclination to jaundice about the conjunctivæ; the tongue was brown and dry; the pulse weak, 100 to 120, the temperature normal.

Much pain was complained of across the umbilical region passing down into the left loin. The abdomen was greatly distended, but not uniformly so. On the left side of the middle line the distension was extreme; the whole of the side bulged greatly, especially in the loin. On the right side the colon, much inflated, could be traced throughout its whole course, but the loin, though fairly full, did not bulge as on the opposite side. There was resonance everywhere. Over the anterior aspect of the left lumbar region was a little tenderness, and the tension was altogether too great to justify any manipulation for purposes of investigation. There was some nausea and a frequent desire to defæcate, which the patient did all he could to restrain, as he said any attempt at defæcation increased the feeling of distension afterwards, an impor-

tant statement for reasons to be alluded to later. The rectum was empty, but through its walls there could be felt projecting down from above a solid mass apparently situated in the gut higher up.

The suffering from the distension was so great that the patient begged for an operation, and indeed insisted upon something being done for his relief. This request I readily acceded to as the case was to my mind clearly one of obstruction in the region of the sigmoid flexure. It was equally manifest that the safest and easiest method of giving relief was to perform a left lumbar colotomy. Before doing this I passed an œsophageal tube, and removed a considerable quantity of gas from the stomach without any beneficial effect so far as I could see. Ether having been administered I cut down through the left loin in the ordinary way; and now came the curious part of the case, for directly the abdominal cavity was opened, before any gut was exposed, out rushed a large quantity of fæculent-smelling gas bringing with it some splashes of liquid fæces.

Upon this the distension subsided almost entirely. On passing the finger into the wound, the intestine could be felt in front of a large space from which the gas just mentioned had been expelled. The colon could be plainly made out, and by manipulation some air which still remained in it could be pressed out through an opening which existed in the gut at the lower part of the space referred to.

At this period the patient became collapsed, did not rally, and soon died. This result was not unexpected, and was one for the possibility of which I had fully prepared him before operating.

I afterwards introduced my hand through the walls of the space into the general peritoneal cavity. Nothing abnormal could be detected excepting in the sigmoid flexure of the colon, where there was a hard mass, just above which was the opening already mentioned. No sign of peritonitis existed in such parts of the intestine as could be withdrawn through the operation wound for examination.

As I had supposed from the first, the case proved to be one of obstruction in the region of the sigmoid flexure of the colon. Of the precise nature of the obstruction I am not quite sure, as a post-mortem examination further than that mentioned in the account of the case was not obtainable, but it was obviously due either to the impaction of a very hard mass of fæces or to malignant disease.

The sudden pain felt by the patient forty-eight hours before the operation was, I presume, coincident with the giving way of the bowel which obviously occurred in a part left uncovered by peritoneum, so that its contents were expelled not into the peritoneal cavity but into the retro-peritoneal cellular tissue.

Such a condition of things would fairly explain the peculiar mildness of the symptoms following immediately upon the rupture as well as the absence of peritonitis and vomiting. To the same cause may be referred the very unequal character of the abdominal distension.

And finally, the statement of the patient that attempts at defæcation only increased his discomfort receives a remarkable corroboration in the fact that such attempts would clearly expel the contents of the gut more and more into the surrounding cellular tissue.

The case appears to me a somewhat remarkable one, as although I have inquired of several surgeons of large experience, I can hear of nothing exactly like it, nor can I, after a rather cursory glance at the literature of the subject, find recorded any precisely similar case, which must be my apology for bringing the matter before the members of this Society.

XXV.—*A Case of Intestinal Obstruction: Nélaton's Operation: Death. Volvulus of the Cæcum: Malposition of the Ascending Colon.* By W. J. Walsham. *Read February* 10, 1888.

THE patient was a healthy man until February 13, 1887. On the morning of that day he was seized with sudden and violent pain over the whole abdomen followed by vomiting and sweating. The bowels were freely opened at that time. Since his seizure, however, he had had no further action of the bowels, and up to the date of admission into St. Bartholomew's Hospital under the care of my colleague, Dr. Gee, on February 15, had not since vomited. This is the note on his entering the hospital:—A healthy-looking man, æt. 63, evidently in great pain; no blue line on gums; tongue clean and moist; temperature normal; pulse 72, full and irregular; urine 1½ pints, acid, sp. gr. 1025, no albumen. The abdomen is slightly distended but is not tympanitic. There is no sign of external hernia, and nothing is detected on rectal examination. On palpation of the abdomen no tumour is felt. In short, beyond slight fulness and some tenderness in the right iliac region nothing was discoverable. On the 16th the note states he passed a fair night and was easier on lying with his legs drawn up. On the 18th he vomited continuously. The bowels remained obstinately confined and no flatus passed. On the 20th he seemed better and the vomiting ceased, but the bowels did not act. Early on the morning of the 21st stercoraceous vomiting set in, and the patient became collapsed. In the afternoon a consultation was held, and it was decided, as no diagnosis could be arrived at further than that the obstruction was probably situated moderately low down, though too high to admit of relief by right colotomy, to open the abdomen, seize the first distended loop that presented, and secure it to the abdominal wall. The patient's general condition was such that it was felt that if an exploration of the abdomen were attempted he would probably die on the operating table or in a few hours from the shock. A short incision was accordingly made in the middle line below the umbilicus, and on opening the peritoneum a small amount of reddish serum escaped. A portion of greatly distended and inflamed intestine—the portion which first presented—

was next secured by sutures to the abdominal wall, and then incised, allowing some fluid fæcal matter to run out. He was ordered ten minims of tincture of opium every two hours, and brandy and egg enemata. On the 22nd the pulse was 80, small and feeble; the temperature 97°. There was no discharge of fæces through the wound. The abdomen continued swollen and tender, not moving on respiration, and the bowels remained unopened, but vomiting did not return. On the 23rd the abdomen was more swollen and tympanitic, and only a very small amount of fæces escaped through the wound. He had evidently peritonitis, and died at 4.30 p.m. on that day.

Autopsy.—At the examination made after death the cause of the obstruction was found to be a volvulus of the cæcum, the cæcum with the contiguous portion of the colon being twisted round the lower portion of the ileum. The abdomen was opened by a median incision, and the portion of skin to which the intestine had been sutured at the operation was removed with the viscera, and was shown *in situ* in the specimen placed on the table. There was general peritonitis, but neither extravasation of fæces nor collection of fluid in the peritoneal cavity. The coils of intestine were much distended and adherent to each other. On tracing the gut backwards from the rectum the sigmoid flexure and descending colon were found normal, but beyond the splenic flexure the colon, instead of passing across the abdomen to form the transverse arch, descended vertically to the left iliac fossa, and thence returned to the lower border of the stomach, forming a U-shaped bend. It then turned to the right, and having reached the median line of the abdomen again ran downwards to end in the cæcum, which was situated over the last lumbar vertebra almost in the median line. There was no ascending colon in the right loin, and the cæcum was absent from the right iliac fossa. The colon was not distended. The gut that had been opened at the operation proved to be the cæcum. It was firmly adherent to the abdominal wall, where it had been sutured. The cæcum with the beginning of the colon was twisted three times from right to left round the lower part of the ileum, forming a corkscrew-like coil, the cæcum being situated at the apex. The cæcum was gangrenous in patches, and at one place the coats had ulcerated quite through, but no fæces had escaped on account of the surrounding adhesions.

Remarks.—The sudden onset and acuteness of the sym-

ptoms pointed to some form of internal strangulation or volvulus, but on the other hand the patient's condition whilst in the hospital was not such as to make it appear probable that the small intestine was the gut involved, and although he was carefully watched for the few days he was in the ward Dr. Gee was unable to arrive at any definite diagnosis. Under the circumstances it was considered that the right treatment would be to open and explore the abdomen, but in the patient's collapsed state it was felt that such a proceeding must almost inevitably be fatal. It was decided, therefore, to perform Nélaton's operation, varied, however, by making the incision in the middle line. As it turned out this procedure of attaching the first presenting coil to the abdominal wall took away the last chance of the patient's recovery, since in thus securing the cæcum, which was the part that first presented, and formed the apex of the volvulus, the untwisting of the gut could not possibly be effected. Had no operation, however, been performed, the condition of the volvulus was such that I cannot conceive it could have become untwisted without surgical interference.

Different opinions are held of the value of Nélaton's operation, and there are some surgeons who hold that primary enterotomy is not to be advised. Thus Mr. Treves says, "The operation is at the best but a palliative measure; it is not founded on sound surgical principles; it is a procedure which is carried out more or less independently of diagnosis; it is an operation done in the dark; and it leaves the cause of the disorder untouched." On the other hand, inasmuch as Nélaton's operation in itself is a much less serious procedure than laparotomy, there are some surgeons who think highly of the operation, and recommend it on this account for cases where others would explore the abdomen. In cases such as the present in which the general condition of the patient makes the risks of laparotomy excessive, Nélaton's operation appears to me to give the patient the better chance. The consideration, however, that like and similar conditions to those met with in the present case, although rare, are of occasional occurrence, should influence us, I think, to some slight extent in determining whether laparotomy or enterotomy should be performed, and when taken in connection with the other objections which have been raised should dispose us to reserve enterotomy as a primary operation merely for those desperate cases in which it appears that laparotomy must inevitably prove fatal.

XXVI.—*A Case of Chronic Intestinal Obstruction: Right Lumbar Colotomy followed by Right Inguinal Enterotomy (Nélaton's operation): Relief: Volvulus of the Cæcum.* By Thomas Bryant. *Read February* 10, 1888.

"I WAS asked on March 26, 1886," wrote Dr. Cumberbatch, who was the patient's medical attendant, and the author of these notes, "to see a lady in Folkestone aged 71, spare, slight, pale looking, but fairly healthy. Two days before she had complained of pain in the abdomen, which she attributed to spasms, from previous attacks of which she is said to have suffered. Two days previously she had had a satisfactory action of her bowels. Dr. Lewis, who had seen her, had given small doses of opium and belladonna. When I saw her she had a quiet pulse and normal temperature. There was no vomiting, but an occasional slight retch, apparently more from flatulence than anything else. That evening she came home to London in an invalid carriage, none the worse from the journey. For the next few days she was in much the same state, had no pyrexia or vomiting, only abdominal pain at intervals with great visible peristalsis, and prominent coils of intestine appearing everywhere. There was no special tenderness in the right or left iliac region. Free enemata brought away nothing, not even flatus. The treatment was 'opium and starvation.' Dr. Wilks and Sir James Paget saw the case with me, and as the symptoms persisted, and it was thought probable that the obstruction was in the colon, colotomy was thought to be the only means of giving relief."

When I saw her (that is, on the seventh day of the attack), coils of distended intestine were very visible and peristalsis marked. A rectal examination revealed nothing. The right lumbar region was selected for operation, as it was considered probable that the seat of obstruction was higher than the descending colon. The operation was performed as usual; the ascending colon found and opened, and when opened absolutely empty. Not a stain of fæces could be detected on the finger when introduced. Through the opening in the colon an obstruction was felt in the right iliac fossa. No

relief being possible from this measure, it was determined, after discussion with Sir James Paget and Dr. Cumberbatch, that a tense coil of bowel which was prominent in the right iliac fossa should be opened, as in Nélaton's operation of enterotomy. This I did, having carefully stitched the coil of small intestine which presented through the opening made in the abdominal parietes to the edges of the parietal wound before opening the bowel. When the bowel was opened solid fæces escaped, and continued to do so for days, with flatus. This escape gave great relief, and the abdominal distension subsided considerably. The patient, however, could never take much food; a very little nauseated her, and although no complications appeared, and the artificial anus became so rapidly established that all the sutures could be removed on the third day, she gradually sank on the tenth day from inanition, but free from pain after the day of operation. After death a necropsy was made by Dr. Goodhart, which revealed such an interesting condition of parts that I publish his report nearly in full.

"*Volvulus of the Cæcum: Extreme dilatation of the Cæcum with Ulceration: Localised Peritonitis.*

"*Inspection* (April 12, 1886).—A lady, æt. 71; the body was very spare, but hardly emaciated. The wounds in the right loin and also in the inguinal region were still quite clean cuts, indicating a decided want of proper repair, considering that the operation had been performed on March 31. The bowel in both wounds was, however, firmly adherent. The wound in the groin had some excoriation around it, as is usual around apertures into the small intestines. On opening the abdomen the abdominal wall was adherent to the bowel at the umbilicus or thereabouts, and again in the epigastric region to the left of the median line, and also towards the left flank, and further examination showed that in all cases the adhesions were to the cæcum, which now filled the quarter part of the front of the abdomen, or, to speak more correctly, covered the remainder of the coils with a large flaccid apron or bag. The sac was found to be a dilated flaccid cæcum with very thin walls, which tore into a large hole when attempts were made to separate it from the surrounding adhesions. Some of these adhesions were organised and of firm texture; others, that near the umbilicus particularly, were still soft and lymph-like. The remainder of the cavity, as brought into view by turning back the abdominal parietes, was occupied by coils of rather contracted small intestine. No colon was visible any-

where, but on further search it was found in its proper position, nowhere larger than a ring finger, and in the right loin running into a ring of something beyond which was the cæcum. Turning up the dilated sac of bowel (cæcum) the cæcal appendix was found on the under surface of the upper part of it. The cæcum was displaced from the right iliac region and turned over, so that the caput cæci pointed upwards to the epigastrium, in fact lay there, and was adherent, and the anterior surface became the posterior. In addition to this displacement a considerable twist had taken place at the neck of the cæcum, or in the early part of the ascending colon, which at the neck amounted to a complete revolution, and was only untwisted by turning the cæcum completely round, but which towards the fundus part hardly seemed to be much more than half a turn.

"The ileum joined the cæcum half way up at its right border, and ran, not, as naturally, to the left, but into the coils of small intestine occupying the right loin. It was not certain how far the displacement may have been aided or determined by it; but running into what now constituted the neck of the twist, above which the parts were dilated, below closely contracted, was a large branch of ileo-colic artery, that formed a thick cord, which was probably present previously to the fatal obstruction, as a very loose cæcum and a comparatively fixed colon would be a condition of parts in which the fixed colon might form a *point d'appui* round which a twist might very readily have occurred. The cæcum contained a quantity of fæcal matter. The colon below the obstruction held a little milky material, probably the remnant of enemata. If so, it may be interesting to note that it extended the whole length up of the colon. In the colon above the obstruction was some thin brownish mucoid material. The stomach contained 5 oz. of beef-tea-like fluid. The gall-bladder was distended, and the common duct was very large; probably a gall-stone had passed at some former period. All the other viscera were quite sound, but of the stomach and intestine one would say that it was all remarkably thin, as if atrophied. At the neck of the twist the peritoneum was white and thick, as if the state of parts had been in existence for a long time. From this condition, and from the nature of some of the adhesions which kept the cæcum in its malposition, Dr. Goodhart was inclined to think that there had probably been some chronic distension of the cæcum leading to ulceration of its mucous surface, and that possibly the late symptoms

may have been peritonitic rather than obstructive. If not, possibly some slight further twist occurred at the time of the onset of the symptoms which rendered an already partial obstruction complete. Dr. Goodhart considered that death was to be attributed to exhaustion dependent upon the ulcerative enteritis, of which he remarked that he had no doubt whatever, from other similar cases, that it is a very exhaustive and dangerous condition when once it supervenes. I may also state that the opening made at the operation of enterotomy was about one foot from the termination of the small intestine in the cæcum."

This case was doubtless, as Dr. Goodhart described it, one of volvulus of the cæcum, the twisting having been much facilitated by the congenital freedom of the cæcum and ascending colon. The surgery of the case on the whole, I maintain was right, though only partially successful, since an exploratory operation in the region of the ascending colon gave promise of the best success. This measure was futile, as it turned out, since the bowel was thereby opened below the seat of obstruction. It nevertheless did no harm, and cleared the way for the operation of enterotomy, which was performed, with the result of relieving the obstruction, and enabling the patient to die painlessly ten days later.

XXVII.—*Sequel to the Case of Ligature of the Left Carotid Artery for supposed Aortic Aneurism reported in Vols. IX and X.* By T. Holmes. *Read February* 24, 1888.

THIS case is reported in vol. ix, p. 114, and vol. x, p. 96, as a "Case of Distal Ligature for Aortic Aneurism." The death of the patient a short time since enables me to correct the diagnosis and to lay before the Society a preparation, which appears to me of no common interest, as illustrating the difficulties which beset the diagnosis of thoracic aneurism. I cannot even now explain the symptoms, and can only say, in my own defence, that my mistake was shared by all the physicians and surgeons who saw the patient, and I think will be allowed by those who will carefully peruse the reports above referred to, and consider the assemblage of symptoms presented, to have been, in the present state of our knowledge, inevitable.

At the same time, the case must undoubtedly be withdrawn from the literature of surgery as an example of distal ligature, or as having any bearing, except negatively, on the treatment of aortic aneurism. It may be used to show into what errors surgeons may fall in the diagnosis, and therefore as a deterrent from too active or dangerous operations.

It will be seen that the patient, then a young woman æt. 21, presented, on her admission into hospital on October 8, 1874, all the symptoms characteristic of aortic aneurism, except an external tumour.* She had loud bruit, considerable thrill extending above the clavicle, some displacement of the heart, pain between the shoulders, grievous dyspnœa, occasional hæmoptysis, and what was most singular of all, considering the condition of parts revealed by post-mortem examination, great weakness and occasional abolition of the pulse in the left wrist. The diagnosis of aortic aneurism, affecting the transverse portion of the arch, being made, after long

* In more than one part of the records the word "tumour" is used; but this is intended to refer to the supposed internal aneurism. A careful perusal of the voluminous notes in my old case-books has satisfied me that there was no bulging of the ribs, nor any tumour perceptible in the neck, though there was violent pulsation as high as an inch above the clavicle.

trial of non-operative treatment the left carotid was tied on October 21, 1875, more than a year after her first admission. She certainly improved much after the operation, and it was natural that the improvement should have been referred to the operation, though, in my report of the case, I was careful to lay stress on the fact that she was neither cured nor likely to be so. She survived for more than twelve years after the ligature of the artery, and though always in weak health from palpitation and shortness of breath, was able to marry and attend to her house. She had no children, but miscarried once.

She died, near Oxford, of acute phthisis, running a course of about six months, and was under the observation of Dr. Collier, of Oxford, to whom I am greatly indebted for the preparation and for the account of the termination of the case. The post-mortem examination was made under difficulties, and Dr. Collier's attention had not been called to the phenomena which during life had been taken as evidence of obstruction of the left subclavian, either by pressure or embolism. Hence, that artery was not dissected, nor was the axillary or brachial examined.

There was a good deal of consolidation at both apices, with softening and breaking down of the lungs, but in Dr. Collier's opinion all this was recent, and there were no signs of any old mischief. There was no tumour in the posterior mediastinum. Nothing abnormal was noticed about the portion of the left subclavian artery which was left behind when the heart and great vessels were removed. I am indebted to Mr. Bull, Surgical Registrar at St. George's Hospital, for the following careful description of the heart.

The heart is of normal size and appearance externally. The right auricle has a well-developed auricular appendix. The inter-auricular septum is deficient, its place being occupied by a thin, but tough, fenestrated membrane, from which fine, thread-like processes pass to the auricular wall (Plate V, fig. 2). There is free communication between the right and left auricles. The right auriculo-ventricular orifice, guarded by a well-formed and competent tricuspid valve, opens into the right ventricle; the pulmonary conus is slightly dilated. The pulmonary orifice is very narrow, and is guarded by two cusps, which are united and leave a small, kidney-shaped opening with slightly roughened edges. There is no trace of a third cusp (Plate V, fig. 1).

The pulmonary artery is abnormally large; the right

pulmonary artery appears as a small branch of the main vessel, and the latter is continued onwards as the left pulmonary artery. The left vessel is about three times as large as the right. The left auricle communicates with the right through a patent foramen ovale. The mitral and aortic valves are well formed and competent. There is no deficiency in the interventricular septum. The aorta is normal. The left common carotid artery is not patent, and has dwindled into a fibrous cord. The obliteration extends from the origin to the bifurcation of the vessel. It is hardly possible to distinguish the precise spot at which the ligature was applied.

A preparation, precisely resembling the above, both in the nature and peculiar shape of the funnel formed by the coalesced pulmonary valves, and in the condition of the septum auricularum, is to be found in the museum of the Hospital for Sick Children, Great Ormond Street.

This condition of the pulmonary artery and auricular septum was evidently congenital, and yet the patient's symptoms were only of comparatively short duration. The cause of the failure of pulse in the arteries of the left arm is left quite obscure by the post-mortem examination. There was no apparent source of embolism, for the heart's valves and the great arteries were quite free from clots. Nor did it seem possible that the left subclavian could have been compressed by any tumour, as if so it could hardly have escaped Dr. Collier's notice in making the autopsy. Again, the variable condition of the pulse in these arteries increases the difficulty in understanding the case.

Still, as it was not a case of aortic aneurism, I have thought it my duty to the Society not to allow it to stand in our *Transactions* uncorrected.

DESCRIPTION OF PLATE V.

Mr. Holmes' Case of Supposed Aortic Aneurism.

FIG. 1.—A. The left ventricle and normal semilunar aortic valves.

B. The funnel-shaped orifice formed by the fused semilunar valves of the pulmonary artery.

C. The abnormally large pulmonary artery. The right pulmonary artery appears at *c* as a small branch of the main vessel; the latter is continued onwards as the left branch.

FIG. 2.—The septum auricularum, showing its reticulated condition.

Fig II

Fig I

E. Burgess lith

XXVIII.—*Case of Laceration of the Axillary Artery in Attempted Reduction of a Dislocation of the Shoulder: Death from Exhaustion, with Symptoms of Septicæmia.* By T. Holmes. *Read February* 24, 1888.

THE patient, W. B., a man æt. 54, appeared to be in fair health on admission (Jan. 24, 1887). He was lame from hip disease in childhood, and said that he had dislocated the left shoulder thirty years ago but that it had been reduced in the Whitworth Hospital, and that the arm had been perfectly useful till three weeks previously, when he slipped and fell on the kerb, and immediately his left arm seemed to "drop down," and "felt as if it did not belong to him." He went to "a doctor," and was told that it was only bruised. On application at St. George's Hospital, however, the signs of dislocation were very evident—the head of the bone being distinctly felt in the axilla, and the deltoid muscle much flattened. The dislocation appeared to me to be of the subglenoid form.

I had him placed at once under anæsthesia, and attempted reduction, first, by Kocher's and other manipulative measures, second, by the heel in the axilla, and third, by extension vertically upwards. As all this failed, I was about to apply the pulleys, when it was seen that a very large extravasation of blood had formed. So large was the swelling that the idea of a rent in the artery at once suggested itself to me. There was, however, no disturbance of the pulse at the wrist, nor could any bruit be detected. Ice was applied to the swelling, and the arm was kept to the side with a bandage.

He was kept quiet till February 10, complaining occasionally of pain and numbness in various parts of the arm, elbow, and hand. On that day a careful attempt was again made to reduce the dislocation by manipulation and by rectangular traction (manual), but without effect. The extravasation was somewhat increased by this proceeding, but the other symptoms remained much as before. Pressure by Martin's bandage was used, and the constant current applied. This somewhat relieved the pain, but the swelling did not subside, but rather increased, and on March 7 it is noted that the pain had become intense, shooting down the whole arm and forearm. I now proposed to excise the head of the humerus, so as to relieve any pressure there might be on the

nerves from this cause, and search for any injured vessel, if any could be found; but the patient would not submit. Matters got worse during the next fortnight; the extravasation now extended to the back of the scapula, the limb was very œdematous, and the pain severe. In consultation (March 23) some of my colleagues thought they detected pulsation in parts of the swelling. The pulse was unaffected, and there was no bruit in the tumour, but the heart's sounds were audible in it. These were accompanied by a systolic murmur.

We were now unanimous in recommending a free incision into the axilla, the removal of the extravasated blood, and a search for the source of hæmorrhage, especially as the man was visibly losing ground, becoming pale and weak and suffering severely. But he still obstinately refused.

He sank rapidly during the early part of April, the swelling became so soft and so discoloured in places that I hoped it might be about to suppurate, and that thus an opportunity might be given to make an incision and search for the injured vessel. But on puncturing the tumour in several places no matter was found, only a little blood. Finally, on April 18 one of these punctures began to slough, and to give exit to some serous fluid. The temperature began to rise rapidly. He refused to take any food, and died on April 23.

Post-mortem examination showed no distinct visceral disease except old pericardial adhesions and some thickening of the edges of the mitral and aortic valves. The ascending aorta was atheromatous, and the thoracic aorta showed some patches of atheroma, but the abdominal appeared healthy. The axilla was filled with an immense clot of blood, weighing over 3 lbs. Much of this clot was very soft, but no distinct evidence of putrefaction or suppuration was noted. The head of the humerus was in the subcoracoid position at the time of this examination. There was a small hole in the axillary artery, close to the neck of the displaced bone, just large enough to admit a probe. The artery looked healthy, and no atheromatous patches were felt in it. The vein was uninjured. The upper part of the humerus was denuded of its periosteum and roughened on the surface.

The preparation will be found in the museum of St. George's Hospital.

The interest of this case consists in the fact that it is, as far as I know, the only one in which after the diagnosis of a

rupture of the axillary artery in reduction of a dislocation, the case has been allowed to go on to a fatal termination, without operative interference, and the parts have been obtained for preservation.

The accident is unfortunately by no means uncommon; at least there are a good number of instances on record, and we may be sure that many others have remained unpublished, for the occurrence is an unfortunate one, and may be held to reflect discredit on the surgeon. And no doubt in some cases injudicious violence seems to have been applied. This was not so, I am certain, in the case before us. The force was not more than I have often used, and seen others use, with success and without any bad consequences.

Nor was there any reason for believing that the arteries were diseased, in fact, post-mortem examination showed that they were not so. No doubt this has been the cause of the injury in many of the recorded cases.

The symptoms agree to a great extent with those of Callender's well-known case, in the 2nd vol. of the *St. Bartholomew's Hospital Reports.* There was no loss of pulse at the wrist, no bruit, and no pulsation, at least for a long period. But the persistence and gradual increase of the extravasation proved that there must be some lesion of a large artery.

In such circumstances the attempt to explore the injured vessel ought not to be delayed for a day, and I think that in cases of unreduced dislocation it will often be found that the removal of the head of the humerus will facilitate the search for the wound in the artery, and will leave a more useful limb on the recovery of the patient.

My case supports Mr. Callender's conjecture that rupture of the artery often occurs from pressure of the head of the bone caused by vertical extension. It is also an interesting example of the small size of a rent which may occasion continuous and ultimately fatal hæmorrhage.

In urging immediate operation, I only mean the remark to apply to cases where the extravasation is increasing and the symptoms beginning to be threatening. I see no reason why so small a hole as this in the main artery might not become obstructed by clot and close spontaneously, and there is always the possibility, in cases not exhibiting any decisive proof of lesion of the axillary, that a smaller vessel may be the seat of injury. At any rate, similar symptoms have disappeared of themselves, as in Desault's and Flaubert's cases, cited by Callender.

XXIX.—*A Case in which the Superficial Femoral Artery was Ligatured for Popliteal Aneurism without Rupture of the Coats of the Vessel.* By John R. Lunn. *Read February* 24, 1888.

THE researches of my friends Messrs. Ballance and Edmunds on the subject of the ligature of arteries, which were published in vol. lxix of the *Transactions of the Royal Medical and Chirurgical Society*, clearly demonstrated that it was unnecessary and unadvisable to rupture the coats of a large artery if it be desired to occlude it in its continuity. I determined therefore to adopt the method which was shown by the paper to be as efficient, and apparently safer than the usual practice of dividing by the ligature the internal and middle coats. The question of the best kind of ligature for completely divided vessels, such as the main artery, in an amputation stump is quite another matter, and I will not here discuss it. I have usually employed catgut for large arteries, but in the paper by Mr. Ballance and Dr. Edmunds it was shown that even the best catgut *may not* hold for more than a few days when subjected to an environment of living tissue; and, on the other hand, that kangaroo tendon suitably prepared will resist the absorption process for two months, and also in other respects is admirably adapted for use in the operation of ligation in continuity.

C. W., æt. 45, a widow, occupation a needlewoman, was admitted under my care in May, 1887, with a pulsating tumour in the right popliteal space. No history of a blow, strain, or syphilis could be obtained. Her family history was good, and she had had eight children. The urine contained no albumen. She stated that two weeks before admission she felt a pulsating swelling behind her leg, which was then about the size of an egg. This gradually enlarged until she was obliged to stop her work as a needlewoman. She thought the right foot was colder than the left, but did not complain of any pain.

On admission, a large pulsating swelling was found behind the right knee-joint in the popliteal space, the swelling was expansile, and over the tumour a loud bruit could be heard. The circumference of the tumour measured 16¼ inches; the

pulsation was easily controlled by flexing the leg on the thigh, and also by compressing the femoral artery. Genuflexion was tried for nearly six weeks without any improvement. Esmarch's bandage was applied once for twenty-four hours; the patient was kept on full diet, and was ordered a mixture of iodide of potash.

After having given a fair trial to these various methods, and having failed to make any impression upon the aneurism, it remained only for me to advise the patient to submit to the usual operation of ligature of the superficial femoral artery. She readily consented. Messrs. Pitts and Ballance were present at the operation. The usual antiseptic precautions were taken. When the sheath of the artery was opened the vessel wall was noticed to be of a tallowy colour, and did not present the proper pinkish tinge of health. I wished to try Mr. Thomas Smith's suggestion, and ligate the vessel with a clove hitch, and as Mr. Ballance had had some experience of the clove hitch in his as yet unpublished experiments on the carotids of horses and asses, I asked him to pass the kangaroo tendon and occlude the vessel by means of a clove hitch without rupturing the coats. This he did. The pulsation of the tumour was arrested immediately; the woman made an uninterrupted and perfect recovery.

The wound in the groin healed by the first intention. It was dressed twice, on the eighteenth and fourteenth days. The anastomatica artery was felt beating on the fifth day. The tumour gradually became harder and firmer, and now measures 14¼ in. The patient was kept in bed until the seventy-second day, when she was allowed up. Up to the present time there has been no return of pulsation, and the site of the original tumour can just be made out. The artery at the point ligatured is not pervious, but I hope to keep the patient in sight as the parts may some day be important from a museum and pathological point of view.

XXX.—*Amputation at the Hip-Joint for Sarcoma of Femur: Secondary Hæmorrhage: Ligature of the Common Femoral Artery: Recovery.* By Bernard Pitts, M.C. *Read February* 24, 1888.

R. T., a draper, æt. 30, came under my care in St. Thomas's Hospital on August 19, 1888. His previous health had been good with the exception of rheumatic fever four years ago. A maternal aunt had died of an abdominal tumour, and he had lost one brother from phthisis. His present trouble began four months previous to admission. He then noticed a hard lump about the size of a large pea on the inner side of his left thigh, and some 3 inches above the condyle. He had been in the Homœopathic Hospital for eight weeks, and was discharged on August 12. An operation was proposed there, but he declined to have anything done. The patient was a thin, anxious-looking man. He stated that he had lost flesh, and had suffered from slight pain in the swelling.

On examination about the middle of the left femur could be felt a hard raised mass, with ill-defined edges except at the upper border, which was nodulated. The tumour measured 5 inches in its long diameter, and was firmly attached to the bone. Its upper border reached to within 5 inches of the flexure of the groin, and the lower border to about 4 inches from the internal condyle. The circumference of the thigh at the level of the middle of the tumour was 16 inches compared with a similar measurement of the opposite thigh of 15½ inches. No glandular enlargement was discovered. A systolic murmur was audible at the heart's apex.

On August 24, an incision was made over the tumour, and a soft bony growth was found surrounding the bone, and very adherent to surrounding structures. A circular amputation was then performed, the bone being divided just below the lesser trochanter. This was apparently well above the seat of mischief, and several inches clear of the periosteal growth.

Whilst the vessels were being secured Mr. Ballance was

good enough to make a longitudinal section through the removed bone.

On examination the tumour showed the typical appearance of osteoid sarcoma. The whole circumference of the femur was involved at the junction of the upper two thirds and lower one third, and the tumour was doubtless of periosteal origin. The medullary cavity was involved as far upwards as within 1 inch of the lesser trochanter. There was no extension of the disease in the medullary cavity below the seat of the growth. The medulla was involved for 2½ inches above the upper periosteal termination of the tumour.

So soon, therefore, as the vessels had been secured, an incision was made on the outer side of the trochanter, and the remainder of the bone was rapidly and easily disarticulated; very little additional bleeding took place, and the patient suffered very little from shock. Antiseptic dressings were employed, and everything went on well until the morning of the 29th, *i. e.* five days after the amputation, when suddenly, at six in the morning, sharp arterial hæmorrhage occurred from the stump. The nurse in charge controlled this by pressure of the common femoral. At 11 A.M. I saw the patient. He was very pale, with weak, irregular pulse, and much collapsed. The house surgeon, Mr. Brooke, had changed the dressings directly after the hæmorrhage took place, and there had been no recurrence of bleeding. It was quite evident, from the quantity of clot in the old dressing, that the bleeding was from some large vessel. I therefore placed a clove hitch of kangaroo tendon round the common femoral, ½ in. below Poupart's ligament and above the profunda, just occluding the vessel without rupturing the coats. Chloroform was administered, and the operation done without moving the man from his bed. Antiseptic precautions were taken.

The patient for several weeks remained in a very weak state; the ligature wound healed without trouble, but a good deal of suppuration took place in the stump, no doubt from the breaking down of retained clot. Convalescence was retarded by a severe bedsore over the sacrum, but he was able to get about on crutches early in November, and left the hospital with a sound stump on November 18. There was then marked impulse of the femoral above the point of ligation, but no pulsation in the exact line of the superficial femoral, hence the artery was not patent at the point of ligation. The pulsation of the common femoral above the

ligated points was more superficial, more visible, and distinctly more forcible than on the healthy side. The patient was last seen at the end of December. He was then well and strong, and heavier than before the amputation.

Remarks.—I need hardly detain the Society by advocating the "Furneaux-Jordan" method of amputation at the hip. The advantages to the patient are so obvious that one can scarcely conceive of a surgeon now resorting to the old method of transfixion. In the same month last summer, at the Children's Hospital, Great Ormond Street, I amputated by this method in the case of a child exhausted to the last degree by hip disease; excision had been performed some months before, and it was the only chance of saving the boy's life. Scarcely any blood was lost, and a rapid recovery took place. Instead of prolonged collapse the condition at once improved, just as if the disease had been in the knee, and the amputation in the lower third of thigh.

But in the case that I have brought forward this evening another distinct advantage was gained by the selection of this method of operating, for it was only after removing the limb by the circular method that it was possible to estimate the desirability of disarticulation. If the growth had not invaded the interior of the bone it was my intention to be content with the removal below the trochanters, or if on section of the bone the growth was extending into the interior, it would have been possible and wise to remove the remaining part of the femur at a subsequent operation, supposing that the patient had been markedly depressed by the primary removal. In fact, I asked permission of Mr. White, who was giving the anæsthetic, and he told me I could safely proceed, since the general condition was satisfactory.

Text-books on surgery are not very clear as to when disarticulation or amputation in continuity should be performed for sarcoma of femur. I would suggest the following as a definite rule:

In any periosteal sarcoma of the lower half of the femur to amputate high in the thigh and well clear of the disease. To have a longitudinal section of the femur made whilst the vessels are being secured, and if it be found that the medullary cavity has been infected by the growth; then to remove the remaining portion of the bone at the time, if the patient's state permit, but if not at a subsequent operation.

In treating the secondary hæmorrhage that occurred in this case on the fifth day the usual practice of opening the flaps

and searching for the bleeding vessel was departed from. The patient's condition would not allow of such a severe measure. The bleeding had been controlled by pressure on the common femoral, and it was highly probable that ligature of that artery would be efficient. The operation involved no further shock, and could be done without disturbing the patient. If it had been possible I would greatly have preferred to open the flaps and turn out the clots, for the subsequent troublesome suppuration was no doubt due to retained clot.

The chief objection to be urged against ligature of the common femoral was the chance of hæmorrhage from the seat of ligature; but I believe that this is greatly diminished if not abolished by the method employed.

The unfavorable statistics derived from cases where a ligature had to ulcerate its way out may be ignored. No coarse injury to the coats was inflicted. The experiments carried out by Messrs. Ballance and Edmunds on the ligature of arteries in continuity without rupture of the coats appear so conclusive that they give the surgeon a greatly increased confidence, and the method is specially applicable to such a situation on the common femoral.

The clove hitch was suggested, I believe, at this Society by Mr. T. Smith, as a suitable knot to use when flat tendon ligature was employed. Mr. Ballance had experimented with this knot on animals, and reported favorably to me as to its efficacy. I confess that the manipulation of the knot requires some practice, and I doubt whether I should have been successful with it if Mr. Ballance had not been present at the operation and given me his assistance.

In conclusion, I will briefly refer to a previous case in which I ligated the common femoral artery without rupture of the coats. I mention this case because I had post-mortem evidence that the occlusion was complete, and that the coats of the vessel had not been ruptured.

A boy, æt. 13, was admitted at St. Thomas's Hospital on September 10, 1887, with fracture of the left thigh at the junction of the middle and lower third. He was climbing a brick wall, when it gave way and fell upon him. On examination there was great swelling of the thigh and popliteal space, the swelling extending as far as the apex of Scarpa's triangle in front and to the gluteal fold posteriorly. The boy was greatly collapsed. Temperature 96·8° F., and no pulsation was to be felt in the arteries of his leg or foot. The

swelling was rapidly extending, he was very restless, and would not tolerate pressure on the femoral. Without moving the boy from his bed I placed a ligature of kangaroo tendon round his common femoral, just below Poupart's ligament, a surgical knot was tied, with just sufficient force to stop pulsation, but not to rupture the coats. The boy died the next evening at 6 p.m.

At the post-mortem examination it was found, as expected, that he had complete rupture of the popliteal artery, independent of his fracture; the common femoral at the ligated point was impervious to water at considerable pressure with a syringe, but the coats were entire.

The ligature was placed on the common femoral, in order to give the boy a chance of recovering from his collapse when an amputation was contemplated.

XXXI.—*A Case of Dislocation of the Semilunar Cartilage of Knee-joint: Excision: Cure.* By John Croft. *Read March* 9, 1888.

JOHN N., æt. 39, labourer, was admitted into St. Thomas's Hospital on April 20, 1887, and discharged, cured, on June 15 of the same year.

He suffered from "rheumatic fever" eight years ago. The right knee was blistered three or four times during that illness. He recovered without lameness. He had not experienced any accident to the joint prior to three weeks before admission. At that time he slipped, his foot gave way, and he fell on his right knee. On trying to get up he found that he was not able to straighten the knee. The joint did not swell.

On admission, he complained of the right knee giving way on walking, and of great pain at such times. He was unable to follow his employment. On examination, the knee was observed to be free from any synovitis, and to be free in its movements backwards and forwards, and these movements did not cause pain.

During repeated examinations of the knee whilst in bed the internal semilunar cartilage could be occasionally displaced, then the act of extension became limited, and complete flexion caused pain. The evidences of displacement were as follows:—First, in flexion to a right angle, what appeared to be the rounded thick outer border of the cartilage could be felt projected and prominent between the tibia and the femur; secondly, on attempting extension a small hard lump might be felt in front of the internal condyle, between it and the ligamentum patellæ; and thirdly, the movements became restricted.

He was watched for a fortnight, during which time he was allowed to go about the ward. The "internal derangement" of the joint frequently recurred. Attempts to reduce the displacement caused only temporary improvement. I perceived that the use of the appliances ordinarily employed in cases of so-called dislocation of the cartilage would prove of little or no benefit, and therefore I advised him to submit to an operation for the cure or permanent relief of the condition.

My intention or plan was to open the joint, and if I found the cartilage separated from its anterior attachments, to refix

it as Mr. Annandale had done in at least four cases at the Royal Infirmary, Edinburgh.

On May 5, I opened the knee-joint by a transverse incision over the semilunar cartilage, commencing about an inch from the edge of the ligamentum patellæ. The incision was 2¼ inches in length in the integuments, but not so long in the synovial membrane. On opening the joint, I discovered that the cartilage in question was still fixed by its anterior and posterior extremities, but was at that moment displaced *into* the intercondyloid notch, having been torn from its circumferential relations. On pulling it into view, it was found to have a small tongue-shaped piece projecting upwards from about its middle. This process was smooth on its upper surface, but striated underneath, where it had been recently torn up from the body of the fibro-cartilage. This was a worse condition than I had expected.

Fig. 5.—The excised portion of cartilage.

I cut through the anterior and posterior insertions, and drew out the intervening portion, which consisted of about three fifths of the cartilage (Fig. 5). When all bleeding had been stopped, and the joint cleansed, the cut edges of the synovial membrane were brought together with fine catgut sutures, except where drainage was provided. The superficial wound was closed by silk sutures. A catgut drain was inserted, and antiseptic dressings applied.

On the third day after the operation, the temperature rose to 101·4° F., owing to tension of the joint. The drainage was imperfect. The capsule had become distended by a considerable quantity of fluid. This fluid was drawn off, and from that time he made an uninterrupted recovery.

On the twenty-seventh day after operation he was allowed to get up; but as the joint quickly filled with fluid he was directed to keep the recumbent posture, and local support was given. On the fortieth day he was pronounced cured, and was discharged.

On October 31, about four months later, he presented himself for inspection. He had been in full work for some time. The knee had not caused him any inconvenience. He could carry 200 lbs. weight on his back, up ladders, without experiencing any fatigue in his knee. He was not wearing any support. This result is entirely satisfactory. He has not missed the semilunar cartilage. The severance of the inter-

nal lateral ligament and capsule have not weakened the joint.

As obstinate cases of lameness from internal derangements in the knee are not uncommon, and as very few "inspections" of such joints have been recorded, I have deemed it important to bring this instance before the Society.

Mr. Brodhurst in 1866 operated on a case somewhat like the one here recorded. He has described his case in the volume of *St. George's Hospital Reports* for 1867, and *Pathological Transactions*, vol. xviii, p. 214, 1867. On opening the joint six weeks or so after the first symptoms he found that the cartilage was held in position at its farther end. It was severed at its attachment, and when removed was found to be the anterior portion of the internal semilunar cartilage. The gentleman was cured by the operation.

In the *British Medical Journal* for April 18, 1885, p. 779, and for February 12, 1887, Mr. Annandale, of Edinburgh, contributes papers on his operative mode of treating dislocations of the semilunar cartilages. He had then opened and inspected the joint in four cases. In three instances the internal cartilage had been dislocated owing to more or less rupture of its anterior attachment, and in the fourth instance the man had sustained dislocation of the external cartilage.

I believe that Mr. Annandale and Mr. Cotterill have since operated on other cases. In none of these were the cartilages excised.

Post-mortem records.—Sir William Fergusson describes a dissecting-room specimen, which was an example of the same intercondyloid dislocation, with laceration of the marginal attachments of the cartilage as in my own case, but in Sir William's there was no lesion of the cartilage itself.*

In the *Edin. Med. and Surg. Journ.* for 1834, p. 377, Dr. Reid described a case in which the external semilunar cartilage was found disconnected from the tibia and from its anterior attachment, and displaced towards the back of the joint.

In the *Pathological Transactions*, vol. xxxi, p. 240, Mr. Godlee has reported another case of displacement of the external cartilage. It had been ruptured from its attachment to the capsule of the joint and remained stiffly in the intercondyloid space.

These constitute, so far as I can ascertain, the few positive "data" in English works concerning dislocations of the semilunar cartilage.

* *Practical Surgery*, 5th edit., p. 323.

Since Hey, of Leeds, published in 1803 his paper on "Internal Derangement of the Knee-joint," considerable attention has been given to the subject, but, so far as I can see, no one undertook the radical cure of the variety due to dislocation of the semilunar cartilage until Professor Annandale began to operate on such cases in 1883.

I have not operated on any other case than the one presented to the Society.

From one case I would not venture to lay down any rules for the surgical treatment of the lesion, but when my case is taken in conjunction with the cases of Messrs. Brodhurst and Annandale, and the three post-mortem inspections which I have mentioned, we have a group of facts from which we may derive some valuable information.

We learn that the semilunar cartilages may be dislocated from their anterior attachments only, from their circumferential attachments only, and from both these relations.

We learn that rupture from the posterior insertion must be very rare, if it ever occurs.

We learn that when the circumferential relations are ruptured the cartilage tends to displace into the intercondyloid notch, and that when the anterior attachments are torn through, the cartilage tends to displacement inwards and backwards.

We learn that in the treatment of such cases as those reported by Mr. Annandale, a good result may be obtained by refastening the anterior portion of the cartilage to the head of the tibia; and from Mr. Brodhurst's case and my own, that it may be a safe practice to excise the whole cartilage. I believe that in my own case the radical cure was the best.

We learn that a working man may preserve a strong, useful, movable knee-joint even when the whole cartilage has been excised.

We learn that the secondary changes observed in the cartilages (see Fergusson's, Reid's, and Godlee's cases) would indicate that early operation is desirable.

If I were to attempt to point out from the few facts before us which are the cases demanding operative treatment, I should attempt too much; but this much may be said, that obstinate cases of dislocation attended by numerous attacks of pain and disability for walking (and work) may be safely subjected to "inspection," and, if need be, to the operation for "fixation" (chondroraphy), or excision of the displaced cartilage (chondrectomy).

No.	References.		Sex.	Age.	Duration.	Lesion and consequences.	Treatment.	Result.
1	Croft	St. Thomas's Hospital, May 5, 1887	M.	39	1 month	Internal cartilage, rupture of circumferential relations	Joint opened, excision of cartilage (chondrectomy)	C.
2	Brodhurst, Specimen in Museum	St. George's Hospital Reports, vol. ii, 1867	M.	25	6 weeks	Internal cartilage, rupture of anterior attachments	Joint opened, excision of cartilage	C.
3	Annandale, Edinburgh, 1883	Brit. Med. Journ., Feb. 12, 1887, April 18, 1885	M.	30	10 mos.	Ditto	Joint opened, suture to tibia (chondroraphy)	C.
4	Ditto, Nov. 23, 1885	Ditto	M.	32	1 year	Ditto	Joint opened, suture to tibia	C.
5	Ditto, July, 1886	Ditto	M.	35	9 mos.	Ditto	Ditto	C.
6	Ditto, Nov. 4, 1886	Ditto	M.	28	6 mos.	External cartilage, rupture of anterior attachments	Ditto	C.

Post-mortem Specimens.

No.	References.		Sex, age, duration.	Lesion, primary.	Lesion, secondary.
1	Sir William Fergusson. Specimen *not* preserved	Practical Surgery, 5th edition, p. 323	Not mentioned	Rupture from circumferential attachments	Outer margin *flattened.*
2	Dr. Reid, Edinburgh	Edinburgh Med. and Surg. Journ., 1834, p. 377	Not mentioned	External cartilage, anterior attachments ruptured	Cartilage *flattened* and *broadened*, and *circumference thickened.*
3	Godlee, University College Hospital Museum	Pathological Society's Transactions, vol. xxxi, p. 240	Not mentioned	External cartilage, circumferential attachments ruptured	Cartilage remained *stiffly* between condyles *flattened and shrunk.*

XXXII.—*On Displacements of the Semilunar Cartilages of the Knee-joint and their Treatment by Operation. With Case.* By Thomas Annandale. Introduced by Mr. Croft. *Read March* 9, 1888.

I HAVE now operated upon five cases, four of which had already been published, *British Med. Journal* for February 12, 1887. The fifth case was that of a woman, K. L., æt. 36, who was admitted into the Edinburgh Infirmary upon February 6 of this year. Her history was that in August of last year she tripped on a carpet and violently twisted her right knee. The accident was followed by swelling and pain of the joint, which required her to keep her bed for three weeks. At the end of this time the swelling was relieved, but when she tried to walk she suffered pain in the joint. Although the movements of the joint were generally good, she was constantly suffering from a sudden interference with them, and at times the joint became "locked" in a slightly flexed position, and its motion was only restored after some manipulation. After admission, the patient was kept under observation for three weeks, and several bandages and supports were applied with a view of relieving the condition, which was recognised to be one of displacement of the internal semilunar cartilage; but as these gave her no permanent benefit, and as she was anxious to be made fit for her work as a domestic servant, I performed the following operation upon March 4. An incision was made along the anterior margin of the head of the tibia, the limb being in the straight position. The incision extended from the inner edge of the ligamentum patellæ to a point a little anterior to the internal lateral ligament. The tissues down to the capsular ligament were first divided along this line, and all bleeding vessels were secured. The capsular ligament was then opened along the same line, but not along its whole length, and the displaced internal semilunar cartilage having been drawn into its proper position by means of a small blunt hook, two catgut stitches were passed through its separated margin and through the periosteum and soft texture covering the head of the tibia. In this way the cartilage was firmly secured in its natural place. The opening in the capsular ligament was now separately stitched

with fine catgut and the wound of the the soft textures also sutured with catgut somewhat thicker. No drainage was used. During the administration of chloroform the joint became firmly "locked," so that when it was opened into the cause of the locking was seen to be that the internal semilunar cartilage was separated from its anterior and lateral attachments, and its separated edge was turned outwards and somewhat backwards and lay in the inter-condyloid fossa.

The wound healed rapidly without any trouble, and the limb was kept perfectly at rest for six weeks. At the end of this time careful movements of the joint were commenced and carried on until April 14, when she left the Infirmary with excellent mobility in the joint.

Remarks.—As a result of my experience I have arrived at the following conclusions:

(1) That the internal semilunar cartilage is the one most frequently displaced. Of the five cases, only one involved the external cartilage.

(2) That three different forms of displacement occur:

a. Separation of the anterior and posterior and lateral attachments, the cartilage being displaced backwards and outwards (three cases).

b. Separation of anterior and lateral attachments, the cartilage being folded upon itself (one case).

c. Separation of anterior and lateral attachments, the inner edge of the cartilage being turned over and lying in the inter-condyloid notch (one case).

(3) The joint and limb should be kept perfectly at rest after the operation for at least six weeks, and then, when the wound is soundly healed, careful movements of the joint and general massage of the limb should be employed.

(4) That the result in all my five cases has been excellent.

XXXIII.—*Two Cases of Dislocation of the Index Finger reduced by opening the joint and division of a retaining band, after failure of other methods.*—By Charters J. Symonds, M.S. *Read March* 9, 1888.

On May 10, while playing, the patient, a boy æt. 9, fell upon his left hand with the fore-finger extended. Reduction was at once attempted without result. The next day he was seen by Dr. Lancaster, of Lewisham, who also failed after the administration of chloroform. The next day, 12th, I saw the boy in consultation with Dr. Lancaster.

The finger was straight and a little shortened. The first phalanx projected posteriorly; its base being plainly felt. The head of the metacarpal bone projected into the palm, where the skin was tightly stretched over it, and a deep sulcus was formed in the skin to its inner side. The joint could be moved to some extent. The head of the metacarpal bone appeared to be retained by some structure on its anterior aspect. The boy was again put under chloroform but all attempts at reduction failed. A tenotomy knife was then used to divide the palmar fascia which appeared tight, but this was unattended by any result.

The boy was then admitted into the hospital, and, with the assistance of Mr. Davies-Colley, another attempt was made at reduction on the 14th. The phalanx was over-extended, over-flexed, rotated, and manipulated in every possible way without the slightest benefit. On the 16th a splint with firm pressure by means of pads was applied with a view of stretching the intervening tissues supposed to exist between the bones while the inflammatory action existed. The boy had an attack of tonsillitis during which time he went home. No improvement having been effected by the splint he was readmitted. I proposed to open the joint from the outer side, placing a vertical incision so as to avoid the vessels and veins, and to see what prevented the reduction and to free the head of the metacarpal bone.

June 6.—The boy being under chloroform an incision was made a little posterior to the middle of the outer lateral aspect of the joint with a view of avoiding the principal vessels and

nerves. The skin and cellular tissue were still slightly swollen. The joint was opened, and on dissecting away the ligamentous structures from the base of the phalanx to give more room, the base of this bone came into view while only a small part of the head of the metacarpal bone was visible, a ligamentous structure concealing the anterior three fourths of the articular surface. An attempt was made to slip this off the head without success, nor could the phalanx be carried forward by manipulation. The ligamentous band was divided, when at once, and with a sudden jerk the phalanx went into place, and the head of the metacarpal bone became visible. It appeared that the head of the bone had been driven through the fibrous structures in front, which held it firmly button-hole like. The displacement was reproduced several times to ascertain further the exact condition of parts, and those present heard the slipping of the ligamentous structure over the head of the bone.

A small spicule was now seen to project from the posterior surface of the shaft, close to the head, and seemed to indicate the existence of a fracture. No crepitus could be obtained, but as the spicule was rough there must have been some injury to the bone. This spicule was removed. Gut sutures were employed to approximate the edges of the ligament and wire for the skin.

On the 18th the lad went home, with some movement in the joint.

October 15, 1883.—The boy has complete use of his joint. He can close his fist, but cannot flex the first phalanx so as to bring it to a right angle with the metacarpal bone, indicating a slight loss of extreme flexion. The finger is useful for all purposes, including the playing of the piano. There is a little thickening round the head of the metacarpal bone.

Dislocation of the index finger.—Charles L., æt. 9, admitted December 17, 1886. He fell from another boy's back into the school playground with his left hand underneath him. He was brought up to the hospital at once, and reduction attempted both before and after chloroform, but without success.

The appearances in this case were identical with those in the previous one. The most marked feature was a projection in the palm, caused by the head of the metacarpal bone. The skin was tightly stretched over it, and so closely applied that it could not be shifted. There was a deep sulcus running with its

convexity to the inner side round this prominence. At the back the base of the first phalanx was seen projecting to a slight extent. The finger was but slightly shortened, so that it appeared that the fore part of the base of the phalanx rested against the head of the metacarpal bone. It seemed, indeed, not half displaced, and its reduction seemed to offer no special difficulty. The relation of parts described indicated a dislocation backward of the first phalanx. Forcible attempts at reduction, by over extending and flexion failed to restore the phalanx. After two days' rest he was again put under chloroform, and manipulation both by Mr. Howse and myself having failed, I proceeded to operate. From the knowledge gained in my earlier case I thought I might subcutaneously divide the retaining structures. A tenotomy knife was inserted into the joint behind and made to cut outwards, but without result. I was afraid of dividing the flexor tendon and the nerve. A vertical incision was made at the posterior edge of the lateral aspect (outer) of the joint. It turned out to be posterior to the abductor indicis, though I would have preferred it to be anterior to this structure. The joint was opened and the whole base of the phalanx exposed. A small part of the cartilage at the inner side of the head of the metatarsal bone alone was seen, and in this there was a slit which reached a short distance into the bone and could not have been made by the knife. The rest of the articular surface was concealed. Still reduction could not be effected. After failing to free the head by vertical division of the overlying tissues, I, by Mr. Howse's suggestion, cut it transversely, when the head of the metacarpal bone was immediately exposed and the dislocation reduced. So quickly did this occur that there was no time to ascertain exactly what the retaining structure was. Whatever it was it covered the greater part of the metacarpal bone, and was derived from the anterior aspect of the joint, and through it the bone seemed to have penetrated. The bones rested in contact, and had no disposition to separate nor could the displacement be renewed.

A gut suture was put in the ligament and superficial ones of gut in the skin. The operation was done under the spray. The wound gaped, a little pus formed, but in a few days he was up and went out well.

In so young a subject and in so small a joint it is not easy to be sure of the exact disposition of parts. This, however, is clear that it was not a tendon that retained the head of the bone.

Difficulty in reducing a dislocation of the finger seems rare and is not mentioned by writers on the subject. Hamilton described exactly the appearance as seen in these two cases, viz. the straight position of the finger and the projection of the head of the metacarpal bone into the palm. The methods of reduction described by him and by others were tried without success. The good result following the operation justified its performance. The attempt at subcutaneous division of the retaining structures failed, and it did so because I think the incision was badly planned. The tenotomy knife should have been inserted directly into the joint and the cut have been made on the head of the bone, instead of which it was made outwards; if made on the bone there will be no fear of dividing important structures with every probability of severing the fibrous retaining band. It is to be noted that in both cases there was a fissure of the bone. Nothing more could be discovered, and as there was no displacement this injury, what ever it was, did not seem to contribute to the difficulty in reduction.

No one I think will deny that every effort was made to reduce the dislocations, neither skill, anatomical knowledge, nor strength being wanting, since I had the assistance of three of my colleagues, Mr. Bryant and Mr. Davies-Colley in the first case, and Mr. Howse in the second.

XXXIV.—*A Case of Dislocation backwards of the Metacarpo-phalangeal Joint of the Thumb, in which Resection of the Head of the Metacarpal Bone was practised.* By G. R. Turner. *Read March* 9, 1888.

EDWARD D., æt. 20, fell downstairs some 6 or 7 feet on to his right hand. For eight days he was treated outside the hospital by a general practitioner. It seems that lotions were used, but nothing else was done. He applied at the Seamen's Hospital for treatment nine days after the accident. The house surgeon recognised a well-marked dislocation backwards of the metacarpo-phalangeal joint of the right thumb. The parts around were swollen, and still showed the remains of bruising. An attempt at reduction by manipulation and extension failed. Ether was given and another unsuccessful trial of the same means was made. On the following day I first saw the patient. An anæsthetic was administered, and a final attempt at reduction having met with no success, I made an incision down on to the head of the metacarpal bone, and tried, by first pulling aside and then cutting the constricting tissues of the heads of the short flexor, to effect reduction. The main obstacle to this, however, seemed to be the tendon of the long flexor which had slipped to the inner side of the metacarpal bone, and was very tense. Reduction was finally effected by pulling this up with a blunt hook. Dislocation was so readily reproduced that it was thought advisable to remove the head of the metacarpal bone. This was accordingly done. The wound ran an aseptic course. Passive motion was gently practised as soon as union was sound, and the patient was instructed to continue it and to use the thumb as much as possible on his discharge. It is now (Nov., 1887) eight months since the accident, and the patient's condition is as follows:

There is a linear cicatrix, about an inch long, on the palmar aspect of the metacarpo-phalangeal joint of the right thumb. It is difficult to appreciate any loss of movement or power, or any deformity. The patient says his thumb is as good and strong as ever. It seems as if the cut end of the

metacarpal bone has been rounded off, almost into a new head.

I venture to bring this case before the Society as showing that displacement and tension of the long flexor tendon may, as well as the short flexor, have something to do in preventing easy reduction. It also shows, I submit, that few if any cases should, as recommended in some text-books, if all attempts at reduction fail, be left in the unreduced condition. Excision of the head of the metacarpal bone has, in this case, met with such success, and in these days of antiseptic surgery is so trivial an operation, that in these cases, at any rate, it should be given a trial.

XXXV.—*A Case of Sebaceous Adenoma involving the Pinna.* By J. Bland Sutton. *Read March* 9, 1888.

In December, 1886, I saw Mr. S., æt. 61, in consultation with Dr. Edwin Hollings, concerning a tumour which involved the left pinna. The tumour was as large as an orange, and extended from the mastoid process to the ramus of the jaw: the pinna was surrounded and incorporated in the tumour, which extended into the external auditory meatus. The surface of the mass had ulcerated, and at the lower part a sinus existed, discharging foul pus suggestive of dead bone.

Fig. 6.—Sebaceous Adenoma of Pinna.

The patient had noticed a small "lump" behind the ear three years before, and had consulted Sir Joseph Lister. At this period the tumour was of the dimensions of a walnut. Unfortunately nothing was done for more than two years: at length the tumour and the discharge from the sinus became so annoying that he again sought advice.

Careful consideration of the history convinced me that the tumour was encapsuled, and my opinion was confirmed by Mr. Henry Morris, who kindly saw the case with me. The risks and difficulties of the operation were explained to the patient, but he was anxious only for relief.

In January, 1887, assisted by Drs. Riding and Hollings, I removed the tumour. All the projecting parts were cut away, and the deeper portions shelled out with a raspatory. When this was accomplished a most extraordinary view presented itself. The walls of the external auditory meatus were destroyed, the mastoid cells were opened, and the squamous portion of the temporal bone eroded. The chorda tympani and the ossicula had disappeared, but the Fallopian canal remained intact. The fenestra ovalis, promontory, and fenestra rotunda were fully exposed to view, and the Eustachian tube was widely open.

Very little blood was lost, no large vessel was tied, and the oozing was checked by the cautery. A firm pad of charpie was applied; and the only antiseptic used was tepid water.

Next morning the patient could distinguish sounds, and I was delighted to find the exposed bone sensitive. In five weeks the whole of this large wound had cicatrized, and Mr. S. was again in his office.

Not only did he recover from the operation but the power of hearing returned to such a degree that the patient was able to resume his violin. He was an accomplished musician, but for nearly three years he had been obliged to put all instruments aside on account of deafness. There was no facial paralysis.

Three months after the operation a small knot appeared at the upper limit of the cicatrix. This was soon removed, and the patient continued in good health.

Appendix. Thus events stood when my paper was sent to the Secretary.

I heard no more of my patient until the commencement of February, 1888, when it was noticed that his health was failing. At this date the cicatrix was somewhat red and painful on pressure; there was, in addition, some fulness suggestive of a recurrence of the tumour. The patient also presented symptoms of aphasia, but there was no evidence of paralysis, no visual defects, or any further interference with his hearing.

The aphasia rapidly increased and became so marked that the patient could not remember the number or name of the

street in which he lived, and a few days later he could not remember any noun, proper or common, except his own name, but he recognised and could repeat the names of objects when he heard them pronounced. Finally he lost this power, and then could not remember his own name.

As the only brain lesion seemed to be loss of the memory for words, it occurred to me that in all probability this was caused by a recurrence of the tumour deeply in the scar, which extended inwards and involved Broca's convolution, and that it would be worth while to trephine the skull and ascertain the dimensions of the intracranial portions of the tumour, and, if possible, remove it. The risks of such a proceeding were fully explained to the patient, and he willingly submitted to any treatment we felt disposed to adopt.

On February, assisted by Drs. Riding and Hollings, I trephined the skull slightly posterior to the region *pterion*, my aim being to hit as near as possible the anterior end of the Sylvian fissure. On removing a circle of bone about the size of a shilling the dura mater bulged into the wound. This was dissected away, and the tumour was seen filling up the space. The opening was enlarged with bone forceps. On introducing the finger it was found impossible to remove the tumour, for it was not only of large size but widely infiltrated the base of the skull. Further interference was therefore abandoned. The patient died comatose three days afterwards. The next day the skull was removed, frozen, and bisected. On removing the brain a tumour of the size of an orange was found sprouting into the middle fossa of the skull. A portion of it had burrowed backwards, and projected into the lateral sinus. The deeper parts of the tumour were connected with a second portion outside the skull, lying deeply in the tympanum. On examining the brain it will be seen that the tumour has made its way into the left temporo-sphenoidal lobe and remained restricted to that portion of the brain, Broca's convolution remaining intact. This is somewhat interesting, for it serves to show that our methods of localising cerebral tumours are not yet accurate, for in this case the only symptom was aphasia of a most marked character, yet that portion of the cerebral cortex which ought theoretically to have been most involved remained intact.

The primary tumour in all probability originated in the skin, between the mastoid process and the pinna, invaded these parts secondarily, and then burrowed into the meatus.

Histologically the tumour is an adenoma, resembling in structure a sebaceous gland. The intracranial portion differs from the external mass only in the circumstance that many of the spaces are dilated into cysts.

XXXVI.—*On "Dry Mouth," or Suppression of the Salivary and Buccal Secretions.* By W. B. Hadden, M.D. *Read March* 9, 1888.

THE patient was a widow, æt. 65, who came under my care at St. Thomas's Hospital on December 1, 1887.

There was nothing of importance to note in the family history. With the exception of an attack of shingles nine years previously, and an attack of facial erysipelas six years later, she had been healthy until the onset of the present illness.

She stated that about seven months before she came under my notice her mouth gradually began to get dry, and that the dryness had steadily increased. To relieve the discomfort caused by the want of natural moisture she had to be constantly sipping fluid. She complained, too, that the act of swallowing was difficult and often painful. There was no history of the prolonged use of belladonna.

After being treated as an out-patient for a few weeks without benefit she was admitted into the hospital under my care, with the object of obtaining more accurate information as to her condition, and also with the view of trying to alleviate the local distress from which she suffered.

On examination, no sign of organic disease in the viscera was detected, and the patient declared that her general health was excellent. Nearly all her teeth were wanting, having been extracted nearly twenty years previously. The tongue was red, devoid of epithelium, cracked in all directions like crocodile's skin, and absolutely dry. The inside of the cheeks, the hard and soft palate, were also quite dry; the mucous membrane was smooth, shiny, and pale, but here and there a few patches of injection were seen. The tonsils were of normal size and appearance. The back of the pharynx was natural in colour, but there was a marked deficiency of moisture. Nothing abnormal was noticeable in the appearance of the sublingual glands, and nothing unusual could be detected by sight and by palpation in the parotid and submaxillary regions. No calculus could be felt in Steno's ducts; their internal openings were not made out. Common sensation of the tongue and inside of the mouth was unim-

paired, and the reflex action of the palate was present. She detected sugar and salt when rubbed on the tongue, but perception was slow, clearly in consequence of the deficiency of moisture. Later on, when the mouth became moister, I found that the reaction of the saliva was slightly acid. I tried on one occasion to ascertain the action of what little moisture there was on a solution of starch, but I failed to detect glucose by the usual test.

I may mention here that during her stay in the hospital, and whilst she was improving, the woman usually noticed some moisture in the mouth when she began to masticate.

The patient informed me that since her mouth had been getting dry she had perspired very little. Her skin, however, appeared to me quite natural, and was certainly not harsh or particularly dry. After her bath on the day of admission the skin of the chest was noticed to be moist. The hair was exceptionally good for her age; it retained its natural gloss, and had no tendency to fall out. The woman told me that about two months before admission she had occasion to cry, but no tears would come. The conjunctivæ appeared to be natural, but on getting her to smell a strong solution of ammonia the lachrymal secretion was not stimulated in the least, although the same solution brought the tears welling to my eyes at once. With prolonged inhalation of the linimentum iodi only a slight moisture of the eyes was produced. So far as I could determine there was no local affection of the lachrymal apparatus. The nasal mucous membrane seemed to be dryer than normal, but the patient had not observed any deficiency of secretion. The sense of smell was unimpaired. The thyroid gland could be felt, and it appeared to be of normal size. The daily quantity of urine was estimated a few times, but there was no notable difference from the average amount, and it contained neither albumen nor sugar. The knee-jerks were natural. There was no facial paralysis, and, with the exception of the dryness of the mouth, no reason to suspect disease of the chorda tympani nerve.

For two weeks the temperature was taken night and morning in the axilla and in the mouth simultaneously. Except on one occasion the temperature was always higher in the mouth. In the morning the difference ranged from ·2° to 1·6°, with an average of ·5°; in the evening the extremes were ·4° to 2°, the average being 1·2°.

The treatment consisted in the internal administration of the tincture of jaborandi in doses of thirty minims three times

daily. The mouth became moister about a quarter of an hour after each dose, but no effect on the skin was noticed.

At 9·45 p.m. on December 14 a sixth of a grain of the nitrate of pilocarpin was injected subcutaneously, but no result was observed in half an hour. At 11.30 p.m. the injection was repeated, and again there was no result within three quarters of an hour, but at 10·30 next morning, that is, eleven hours after the second injection, the tongue was said to be quite moist, and the skin of the chest clammy to the touch.

The woman, who is now an out-patient under me, still continues the use of jaborandi. The mouth is much moister, and the lachrymal secretion can easily be excreted by inhaling the strong solution of ammonia.

The condition which I have described is no doubt rare, at any rate if one may judge from the scanty reference made to the subject in medical literature. Last year I saw an identical case, which was exhibited at the Neurological Society by Mr. Jonathan Hutchinson.

In the *Medical Times and Gazette* for November 21, 1868, there is a brief account in an anonymous letter of a case of apparently similar nature.

Quite recently (*Lancet*, January 14, 1888) my friend Dr. Rowlands called attention to a case of "permanent suppression of the salivary secretion." Dr. Rowlands kindly sent me the details of the case, of which the following is a brief account:

The patient is a lady, æt. 60, who has enjoyed fairly good health. There is no history of facial paralysis. Ten years ago, after a nervous shock caused by the news of the sudden death of a friend, she awoke one morning with an intense dryness of the mouth and throat. She found relief by constantly sipping cold water, but the distress was so great that for some nights she was unable to sleep. The discomfort gradually became less, but the tongue and mouth have remained perfectly dry ever since. She does not consider that the absence of saliva has made any difference in her general health. The tongue has now the appearance of a piece of dry raw beef; the papillæ on the anterior surface, with the exception of the circumvallate, are wanting. The buccal and palate surfaces are dry and glazed. The parotid and submaxillary glands appear natural, and no calculus can be felt in the position of Steno's duct. Taste is natural when the substance is in solution. The nasal mucous membrane is normal, and smell is unimpaired. The conjunctivæ are of

natural moisture, but crying is never attended with a flow of tears. Dr. Rowlands informs me that the skin is very dry, and that during the hot weather she used to suffer greatly. The hair also is said to be dry. The urine contains neither albumen nor sugar.

As regards this condition of "dry mouth" I have nothing sound to offer in the way of a pathological explanation. It would appear, however, that the suppression of the salivary secretion does not depend on any gross change in the glands themselves. With reference to my own case I was originally inclined to ascribe the arrested secretion to some disorder of the nervous apparatus, and the sudden onset in Dr. Rowlands' case certainly lends support to this view.

XXXVII.—*A Case of "Dry Mouth."* (*Aptyalism.*)

By Jonathan Hutchinson, F.R.S., LL.D. *Read March* 9, 1888.

THE case which I have to describe is that of a widow woman, who was sent to me by my friend Dr. Cotman, of the Minories. The chief feature of her case was an all but absolute dryness of the whole mouth, including the lips, cheeks, tongue, and palate. This condition had been present for six months before I saw her, and she remained under my observation for nearly two years. On one occasion she attended a meeting of the Neurological Society, where her condition excited much interest. Although I saw her on many occasions and under considerable variety of treatment, I never once saw her mouth really moist. It was sometimes a little sticky, so that the finger touching the lining membrane of the cheek would adhere slightly to it, but there was never enough moisture to make the finger in the least wet. Her tongue was in a similar condition, and she was much troubled by its sticking to the roof of her mouth, which also was quite dry. No insalivation occurred during eating, and she was obliged constantly to aid the process by taking small quantities of water. Sometimes a small bead of a perfectly transparent jelly was seen over the orifice of Stenon's duct.

We tried in succession a variety of remedies, likely and unlikely. Mercury was pushed until it made the gums slightly sore, but it did not produce any ptyalism. She also took quinine, steel, iodide of potassium, and finally opium and belladonna, but without any effect. Throughout she enjoyed very fair health, although her dry mouth caused her great inconvenience. The frequent use of glycerine relieved her more than anything else. The inhalation of ether was tried for a short time as an experiment at the Neurological Society, but with no result.

The condition appeared to me to be an exaggeration, assuming permanency, of the state of mouth which is common under the emotion of fear and during states of nervous excitement. It was not merely an arrest of the secretion of the salivary glands, but of that of all the mucous follicles and other gland structures throughout the whole of the mouth. In

connection with this suggestion, it is of interest to note that it was possible that it had begun in connection with deep emotion. Our patient, although a widow and nearly 60, had experienced a disappointment in love which she had felt acutely, and it was very shortly after she had been suddenly informed that a marriage upon which she had set her heart would not take place that her mouth became dry. As regards the secretion of the lachrymal glands, she stated that it was by no means arrested, nor did the conjunctivæ or the mucous membrane of the nose show any tendency to become dry.

I believe that this woman remains still in the same distressing condition, her dry mouth having now lasted more than two years. Her general health is still fairly good.

Remarks.—This is the most marked example of a dry mouth which I have ever seen, but it is not the only one. In a lady under my care a year ago for a very peculiar form of skin disease, allied perhaps to erythematous lupus, the mouth was for several weeks quite dry. After a time, however, under the influence of opium the condition passed off. In one or two other cases I have observed as a temporary or partial state a similar condition. Examples of the opposite condition, a profuse flow of saliva or spontaneous and persisting ptyalism without stomatitis, are much more common. This state is not infrequently seen in general paralysis of the insane and in other disorders of the nervous system. A remarkable liability to both wet and dry mouth under different conditions is often met with as an individual peculiarity. It is generally indicative of want of tone and sometimes premonitory of other nerve disorder. In some cases, however, it persists through life, and though productive of much annoyance, appears to be devoid of serious significance. Such persons have the whole mouth become perfectly dry if subjected to any sort of annoyance when in company with others, whilst taking food or tea or coffee may cause for an hour or two afterwards a profuse and annoying flow of saliva and mucus in the mouth. It is to be noticed that in such cases the entire mouth is involved. The wet mouth, as a rule, persists much longer than the dry one. The latter condition lasts perhaps seldom more than a few minutes, unless, indeed, the conditions exciting it be prolonged. As already remarked, the peculiar feature of the case which I have recorded consists in the fact that this physiological condition, very common as a transitory state, has here assumed permanence.

XXXVIII.—*A Case of Hyperpyrexia in Acute Rheumatism, treated by Ice-pack.* By William M. Ord, M.D. *Read March* 23, 1888.

H. T., male, æt. 32, pianist, was admitted into St. Thomas's Hospital on May 31, 1887, for a first attack of acute rheumatism.

Family history.—His father died, an old man, in a lunatic asylum. His mother was alive, in vigorous health. One of his brothers has had rheumatic fever. The remaining brothers and sisters, number not stated, were well and healthy.

Previous history.—The patient, a native of London, started five years ago as a professional pianist in South Kensington. Is accustomed to be out in all weathers, and often gets wet through. He has always been subject to heavy perspirations, and has for some time been subject to severe night-sweats. He has been a heavy beer-drinker.

Present illness.—About three weeks before admission, he was exposed to severe cold when riding on the outside of an omnibus. The next morning he had pain and inflammation in his knees, and subsequently in other joints.

State on admission.—A stout and heavily-made man, with dull expression, livid complexion, and suffused eyes. He presented sharp rheumatic inflammation in both hands; a less severe inflammation in both feet, chiefly on the dorsal aspect; effusion in both knee-joints with redness and tenderness; and some effusion in both ankle-joints. There were distinct signs of pericarditis with effusion, and slighter signs of endocarditis. He complained of pain in the back on swallowing. The pulse was 104 in the minute, full and tense. The temperature was 102·4°, the respirations 40 in the minute. There was no affection of the lungs. The urine was of 1025 sp. gr., contained one sixth of albumen, and very little chloride. He was ordered to have twenty grains of salicylate of soda every four hours, and thirty grains of bromide of potassium, at once, and at bedtime. I saw him for the first time on June 2. He had been delirious in the night to such an extent as to call for his removal from the general ward to a small ward.

At the time of my visit he was still greatly excited, and

had hallucinations and delusions. He was very tremulous, and was constantly endeavouring to get out of bed. The joint-affection had diminished in severity, the pericardial effusion had increased, but there was no sign of advancing endocarditis. The pulse was 108 in the minute, and very tense. The albumen had increased to one quarter. His temperature at 4 A.M. had been 102·6°. At the time of my visit it had fallen to 101·4°. In discussing the case I observed that the delirium was such as might be attributed to pericarditis, but I had to point out that while we had a constant succession of cases of pericarditis in hospital, such delirium was not very common unless high temperature was present. I was inclined to refer the delirium in part to his large beer-drinking, but remarked that it was more like the delirium of hyperpyrexia than anything else. On the other hand, as may be observed, his temperature was that of only moderate pyrexia. The salicylate was now discontinued and carbonate of ammonia substituted. On leaving the case in the hands of my excellent house physician, Dr. Wheaton, I desired that, if there were any serious increase of temperature, no more anti-pyretics should be administered internally but that such form of treatment by cold applications to the surface as might be best applicable should be resorted to. Dr. Wheaton's notes show that on the 3rd the pericardial effusion had further increased, and that, while in the morning pleuritic friction was heard over the base of the left lung, there were signs at night of pleurisy with small effusion on the right side. On this day the temperature was altogether higher. At 8 A.M. it was 104°, at noon it was 102·8°, whence it rose steadily, reaching at midnight 105°. I now quote, textually, Dr. Wheaton's notes made on the 4th.

"The temperature rose steadily during last night, and at 4 A.M. reached 108·4°. The patient, having previously been violently delirious, was now unconscious; face pallid; pupils dilated; very restless, throwing his arms and legs about, with slight convulsive tremors from time to time; heart's action irregular; pulse 160; loud systolic murmur at the apex and at the right base; skin intensely hot, dry, and pungent; respirations 58. The patient was now wrapped up in two sheets wrung out of iced water, and a blanket was laid lightly over him. After a quarter of an hour, the temperature still remaining at 108·4°, pieces of ice were scattered over the sheet and the blanket removed. Half an hour later, the sheets having become hot and steaming, were removed.

Fresh sheets, again wrung out of iced water, were applied, and ice was sprinkled over them. At 5.30 the temperature fell to 107·4°, and continued to fall afterwards, until at 7 A.M. it was 100°. The ice-pack was then removed, and the patient was wrapped up in a blanket. At 8.30 the temperature was still 100°, the patient had recovered consciousness and spoke sensibly, but was very tremulous, and the pulse was 100. The temperature rose at night to 103·6°, but fell during the following day to 101·4°, namely, at 9 A.M. It rose to 103·4° by 6.30 P.M. and then gradually fell, until at 8.30 on the 6th it was 100·2°."

On the 6th the note is to the effect that the patient slept fairly during the previous night without delirium. The signs of pericarditis had disappeared, so also had the signs of pleurisy, but there was a well-marked systolic murmur at the apex. Pulse was 92. The joint affection had diminished considerably. The body and arms were covered with sudamina. On this day the highest temperature registered was 102·2° at 8 A.M. and at 8 P.M., but in the latter part of the 7th an increasing temperature was registered till at 2 A.M. on the 8th it was 105·4°. During the later hours of the 7th the patient had become very drowsy and was only half conscious; he was also sweating profusely. The murmur at the apex had disappeared, there was no pericardial effusion, and the albumen had disappeared from the urine. The chlorides were but slightly deficient.

At this point Dr. Wheaton was succeeded by Mr. Macevoy in the post of house physician.

Mr. Macevoy finding, at 2 A.M. on the 8th, the temperature of 105·4° already noted, and finding also that the patient had become almost unconscious, applied the wet sheet, &c., as before. By 5 A.M. the temperature was 100° and the patient had recovered consciousness. The temperature rose gradually during the day, reaching its highest point at 8 P.M., namely, 103·2°. The patient then answered questions well, the pulse was regular at 92, and the systolic murmur at the apex had disappeared. From this point onwards the patient made a gradual but continuous recovery. He was fed well, was treated with iron and ammonia. On July 3, normal temperatures were registered and continued till the 15th when he was discharged in good general health and without sign of lung or heart disease.

The Society will allow me to express my thanks to my house physicians, Dr. Wheaton and Mr. Macevoy, for the

admirable way in which they carried out my wishes and for their excellent notes of the case.

I may remind the Society that last year the late Dr. Carrington read the notes of a case in which the temperature rose several degrees higher than in the present case, and where the results of similar treatment were successful.

Although in cases of moderate pyrexia occurring in acute rheumatism, the use of salicylate of soda, and in more severe cases, the use of the antipyretics now in vogue, are fairly satisfactory, I must confess that the administration of these drugs in increasing doses at shorter intervals is far less satisfactory. There is a good deal in the action of every one of these remedies, when strongly pushed, which makes me fear that they may be doing harm in other ways while they are being used to reduce temperature.

I have had considerable experience in the application of various forms of bath treatment for this purpose, and am disposed to trust to them rather than to drugs, as being more rapid and certain in their action and attended with less risk. It need not be said that they, in common with other remedial agents, must be carefully used and under certain limitations.

I published in the *St. Thomas's Hospital Reports* for 1877 two cases of acute rheumatism, in which hyperpyrexia, rapidly increasing in spite of the administration of large and frequently repeated doses of salicylate of soda, was at once arrested by the graduated bath, never to return, both patients making an uninterrupted recovery.

The method of treatment used in this case differed, owing to the condition of the patient, which rendered removal from the bed impossible. Dr. Wheaton, therefore, adopted the ice-pack as the best available substitute, and was, as it will have been seen, led, after trying one degree, to adopt a more energetic form of treatment.

There can be little doubt that the patient's previous habits contributed to the severity of the case, but it is a matter of interest to me to note that, independently of this, his condition when I first saw him suggested to me the idea of hyperpyrexia, although his temperature then was only moderately raised. One thing is certainly remarkable, namely, the rapid disappearance of head symptoms and of local inflammation, as well as the diminished frequency of the pulse, following the pack. The patient, previously first violently delirious, and afterwards unconscious, recovered his intelligence, the signs of pleurisy disappeared, and those of peri- and endo-

carditis were greatly diminished, while the pulse fell from 160 to 100. There was absolutely no drawback whatever to the effects of the treatment.

Finally, I may say that I have brought this case forward, not with the object of attacking the use of anti-pyretic drugs in cases of high temperature, but to put in the plea for the use of a method which, if somewhat troublesome, has proved in this and other cases to be effective and safe.

XXXIX.—*Two Cases of Hyperpyrexia successfully treated by Cold.* By C. J. Arkle, M.D. *Read March* 23, 1888.

CASE 1.—A. W. G., æt. 27, married, a railway clerk by occupation, was admitted into University College Hospital, under the care of Dr. Money, complaining of (1) feverishness; and (2)pain and stiffness in joints.

Previous health.—Fairly good. Had syphilis nine years ago. No previous attack of rheumatism.

Habits.—Rather irregular. Drinks a fair quantity of beer, no spirits.

Family history.—Mother died after an attack of rheumatic fever. Sister subject to rheumatism.

History of present illness.—On September 10, the patient caught a chill when riding, lightly clad, on the top of an omnibus. Next day he left off work, feeling out of sorts, and on September 12 noticed one ankle swollen and painful, so that he could not get his boot on.

During the next two days all his joints were attacked in succession, becoming hot, red, and swollen.

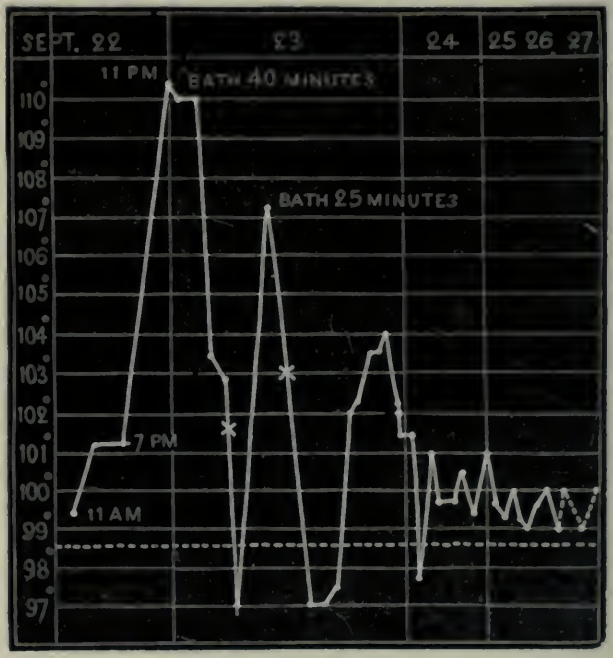
On admission, September 21, 1887, patient is described as a tall, fairly well-nourished man, in great pain—both wrist-joints much swollen, hot and tender—some redness over both ankles. Tongue covered with a thick, creamy fur, but clean at the edges and tip. He was sweating profusely, and the sweat had the characteristic sour odour. No rash. No headache. Temp. 101·4°, pulse 102. Heart-sounds loud, no murmur. He was placed in bed, between blankets. The wrist-joints were wrapped in cotton wool, and the left wrist had oiled silk in addition over the wool. He was ordered calomel gr. v. at night, and a mixture containing soda salicylate gr. xxx every three hours.

September 22.—Patient was doing well. Salicylate of soda producing an effect. Patient complaining of deafness. Temp., 11 A.M. 99·8°, 7 P.M. 101·2°.

At 10 P.M. his temperature was 104°.

At 11 P.M.—Without any warning, patient became suddenly violently maniacal, screaming at the top of his voice and using

very foul language to all around him. He got out of bed, struggled with the nurses, and tried to get out of the ward. He was carried from the ward in a blanket and put in a room by himself. His body was at times quite rigid, with sudden extension movement of both legs, clonic in character. He was very exhausted. Resp. 48. Skin quite dry and of burning heat. Skin of abdomen covered with red miliary rash. Face very pale. Lips blue. Alæ nasi working forcibly. Eyes widely open, pupils dilated. He was still very violent.



Temperature in rectum 108·4°, pulse 180, very feeble. It was decided to put him in a cold bath. There was a short delay in preparing the bath, but at 11.55 P.M. he was lifted in, the rectal temperature at the time being 110·4.° At this time he was quite comatose, the struggling and screaming had quite ceased, the whole body was rigid, the eyes rolled upwards, there was nystagmus, with slight spasm of the face muscles, and marked retraction of the head. Ice was then placed in the bath and ice-cold water poured over the head

and chest. He was kept in the bath forty minutes, during which time the temperature rapidly fell, consciousness returned, and the pulse and general condition improved. On recovering consciousness, he began to speak, saying "Isn't it marvellous?" an expression which he repeated to every interrogation, and one which he subsequently told us that he is constantly using in every-day life.

At 12.35 A.M. (September 23) he was removed from the bath and placed in bed between blankets, his temperature at the time being 101·8°; pulse 132. His temperature continued to fall at rather an alarming rate when he was put back to bed so that at 1.15 A.M. it was 97° in rectum. He was given brandy by mouth and rectum, and surrounded with hot bottles. At 2 A.M. the temperature began to rise again as rapidly as it had fallen. He was given a mixture containing Antifebrin gr. x at 2.30 A.M., and this was repeated at 3.45 A.M., the temperature still rising. In spite of everything the temperature at 4.45 A.M. reached 107·2°, the pulse being 132. The cold bath was accordingly repeated at 4.45, the patient being kept in the bath twenty-five minutes. His condition was much the same as before, with this exception, that he was conscious all the time and talked incessantly, saying "he could stand it a good deal colder." He was taken out of the bath at 5.10 A.M., his temperature being 103°, and pulse 114.

After this bath patient gradually improved. During the next few days the temperature showed no tendency to run up excessively, and with the exception of a sore-throat, some weakness of shoulder-muscles, and slight general exhaustion, he had no bad symptoms. There was no return of the joint affection, and no visceral affection. The heart acted feebly until he was allowed to get up, when it rapidly improved, and at no time was a bruit audible. For a day or two after the attack the urine was albuminous, but this disappeared, and he was ultimately discharged cured on October 21, 1887.

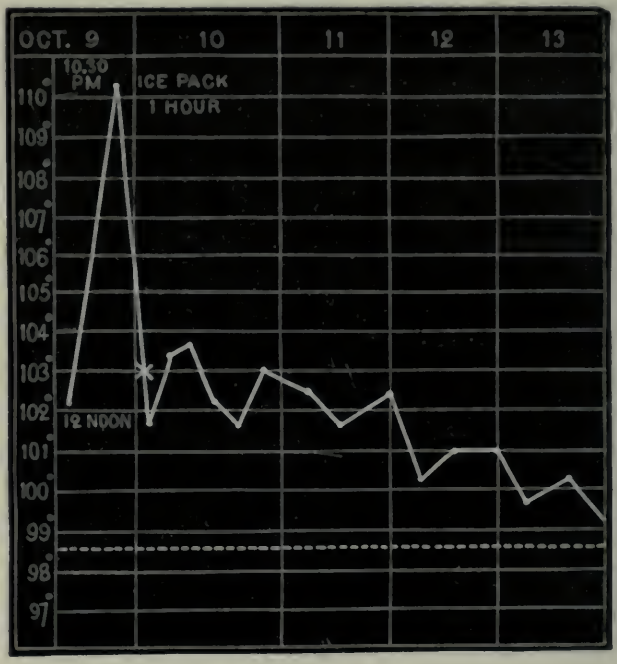
Case 2.—E. C., æt. 30, a married woman, was first seen by Dr. Ringer on October 9, 1887, at her own home, when the hyperpyrexia was well marked.

Previous health.—Fairly good. Had an attack of rheumatic fever eighteen years ago with no complications.

Family history.—Good. No history of rheumatism.

History of present illness.—October 2.—Had joint pains; not severe enough to make her seek advice. Was first seen

by a medical man at mid-day on October 9, when her temperature was 102·5°. She was ordered a mixture containing salicylate of soda and henbane. No swelling of joints at any time. At 10.15 P.M. her temperature was 110·4°. Joint pain obviously present, but skin dry and burning hot. As no bath was available she was treated with application of ice-cold cloths, the method adopted being to have separate towels for the limbs, chest, and abdomen wrung out of ice-cold



water and changed as rapidly as possible. This was kept up for an hour, the temperature gradually falling to 103°, when it was discontinued. During the hyperpyrexia the condition of the patient was very similar to that in the first case. She lay quite unconscious; delirious, with maniacal outbursts; breathing very rapidly; with widely-dilated pupils and almost imperceptible pulse. There was also great retraction of the head and marked opisthotonos, and this condition persisted long after the fall of the temperature. Whilst in this delirious

state she was so violent at times as to require three persons to hold her in bed whilst the applications were being changed.

As the temperature fell the pulse improved, falling from 170 to 135, and improving a little in quality. A nurse was sent to watch her during the night, and to administer stimulants by rectum, but during the night she was able to take plenty of milk and brandy by mouth. Her temperature was taken hourly during the night, and averaged 103°.

On October 10, she was brought to University College Hospital in an ambulance, and remained for two days in a very precarious condition, suffering from great exhaustion and prostration from want of sleep. She obtained a good night's rest after Tinct. Opii ♏xv, and awoke much refreshed.

She was given salol and salicylate of soda during the rest of her stay in hospital, the temperature showing no tendency to run up. She was discharged well on October 27, but still taking Sodæ Salicylas gr. xv three times a day.

Since her discharge she has had a second attack of rheumatic fever with all her joints affected, and also pericarditis, and has been readmitted into hospital, where she is convalescing.

Remarks.—These two cases, which of course throw no light on the pathology of hyperpyrexia, seem worth recording on account of the success which attended the remedial measures adopted.

In both cases the temperature was very high, 110·4°, and both cases seemed to belong to the type in which the temperature, after maintaining for one or more days a moderate level, suddenly rises to an excessive height.

In both cases the temperature was exceedingly tractable, showing very little tendency to run up repeatedly; in the majority of cases it is found that a succession of baths, often as many as twelve to twenty, is necessary to keep the temperature down.

With regard to the application of the cold, there can be no question that the bath is the most convenient method of dealing with a hospital patient, although this might be open to criticism in private practice, and the efficacy of the ice-packing in the second case fully established this latter form as a powerful antipyretic. There is nothing to note in either case to throw any light on the etiology. One patient was a male, the other a female. One had a first attack, the other a second, in one case there was a history of family predisposition,

in the other not; both patients were taking salicylate of soda at the time, and both appeared to have mild uncomplicated attacks.

In both cases there was cessation of sweating, and in the first case there was abrupt disappearance of articular pain.

In both cases the delirium accompanied the hyperpyrexia, and was of the same violent, maniacal character in each.

Both patients had marked retraction of the head, and in the second case there was, in addition, severe and persistent opisthotonos.

XL.—*A Case of Gall-stones, illustrating their spontaneous fracture.* By A. Pearce Gould, M.S. *Read March* 23, 1888.

Mr. J. W. C., æt. 38, was brought to me in May last by Mr. Clapton. He was a robust healthy-looking man. He stated that his present trouble began two years before in an attack of jaundice which for an hour was accompanied by very severe pain in the epigastrium, and collapse. He had had slight attacks of jaundice and also of pain since. The diagnosis of gall-stones was made, but no calculus was ever detected in the fæces. Soon after the first attack of jaundice a swelling was detected which was said to be a distended gall-bladder. Just after Christmas, 1886, he felt a tightness across the upper part of the abdomen, and felt a lump, which since then had continued to increase in size, but had not given him any pain.

At the junction of the epigastrium and right hypochondrium I found a swelling over which the skin was reddened, firm at the periphery, soft and fluctuating in the centre, neither painful nor tender. There was no enlargement of the liver or spleen, no jaundice or other disorder. The lack of tension in the central part of the swelling rendered it difficult to obtain fluctuation. The diagnosis of abscess in the abdominal wall probably connected with gall-stone was made, and an operation was advised. Sir James Paget subsequently saw Mr. C. and confirmed the diagnosis.

Accordingly, on May 28, I made an incision into the abscess and let out some thin grey pus, and at once a small gall-stone appeared at the wound. On passing in the finger a deep sacculated cavity was entered and many small calculi were felt; these were removed by the finger or forceps or by irrigation. The cavity was as deep as could be explored by the forefinger and very pouched. No bile escaped; a large drain was introduced, and the part dressed with corrosive sublimate wool.

The subsequent course of the case, although tedious, may be told in a few words. The wound rapidly contracted down to a sinus, which showed no signs of healing, and on July 16, I enlarged the outer end of the sinus and explored

it, hoping to find some fragment of stone in a deep recess. The sinus was 4 inches long, irregular at its deep end, but no calculus could be detected. It contracted very slowly, and it was not until early in November that it completely healed.

The calculi, 140 in number, weighed 21 grains when dry, none of them were broken in their removal; they are all small, and their chief interest, I believe, lies in the evidence they afford of spontaneous fracture, like that to which Dr. Ord has drawn attention in urinary calculi. The larger ones all show one smooth grey convex surface, the other surfaces being uneven, and mottled with a darker brown colour, as if a spherical or ovoid calculus had undergone a radiating fracture into several more or less pyramidal pieces. There is nothing to suggest that the fracture has been a disintegration of the cortical portion of a stone. The calculi are soluble in ether.

The spontaneous exit of gall-stones through the abdominal wall was first described by Petit in 1730, but the cases in which this occurs are so infrequent that Cruveilhier only met with one, and in 1851 Fauconneau-Dufresne could only find 19 recorded instances. Since that several others have been published, and I have been able to collect 35. Curiously, my own case is the only one I have met with where the nature of the abscess was recognised and an operation undertaken for the removal of its cause. In all but one of the other cases the abscess burst spontaneously, and its nature was only suspected when the calculi escaped.

The abscesses have opened most frequently above and to the right of the umbilicus, often at the umbilicus, sometimes at the xiphoid cartilage, or below the umbilicus even so low as the groin.

In the great majority of cases no bile has flowed from the fistula, showing that the cystic duct has been obliterated.

The abscesses have generally been chronic in their course, attended with great surrounding induration, but slight pain and constitutional disorder, and have contained only a small quantity of thin pus.

The published records of many of the cases are incomplete, but it would seem that when all the calculi have been removed and have escaped the sinuses heal without further trouble.

The most remarkable case I have met with is one recorded by Dr. Alexander and Dr. Irvine (*Med. Times and Gaz.*, 1876, vol. ii), in which two gall-stones escaped, and after the second all the food taken by the patient flowed from the sinus. Death from inanition quickly supervened and the sinus was

found to pass through the entire thickness of the liver and on into the first part of the duodenum.

The calculi that have given rise to this complication have varied in number and in size within large limits: the largest was in a case reported by Dr. Duncan, it weighed 390 grains; in the great majority of cases the stones have been numerous and small. I cannot find that any answer has been given to the very interesting question, why in some cases gall-stones lie in the gall-bladder without giving rise to any symptoms at all, at other times make their way towards or into the intestine, and in other instances pass directly outwards to the surface. It would seem that these little calculi could have passed along the common bile-duct into the intestine without much difficulty had the way been open. And if this path were closed, the question arises why the gall-bladder did not become distended as it sometimes does when a stone blocks the cystic duct.

XLI.—*A Case of so-called Acromegaly*. By Rickman J. Godlee, M.S. *Read April* 13, 1888.

EXAMPLES of this disease are so rare, or, at least, so little known, that no apologies are needed for bringing the following notes of an undoubted case before the Society; and no apology is necessary for their brevity, because I know that this paper is to be followed by one in which Dr. Hadden will give an account of the literature of the subject, and especially of the able description of the disease by Marie.

In the early part of 1887 I was consulted by a lady, æt. 41, on account of a great enlargement of the thyroid. The swelling was very extensive, irregular, and nodular, extending far out and down in the posterior triangles. It was in parts hard and in parts soft, and suggested a malignant growth in the gland. The appearance of the patient was very remarkable, the coarse features and large lips and eyelids raising for the moment the idea of myxœdema, but it was soon clear that she was not suffering from this disease.

Marie's description of *acromégalie* was then quite unknown to me and to Dr. Douglas Powell, who saw the patient with me, and though we were aware that she was suffering from a disease with which we were unacquainted, we did not take any accurate account of her state until she returned to London in November, 1887, suffering now from intense neuralgia of the side of the head, caused by the pressure of a cyst which had recently developed on the right side, exerted upon some of the branches of the cervical plexus of nerves.

This cyst I opened, and, after evacuating the brownish serous contents, stitched its smooth lining membrane to the skin, and irritated its interior by the application to it of pure carbolic acid. A drainage-tube was inserted, and the gradual closure of the wound resulted after about two months. The neuralgia was completely relieved.

Inquiries into her previous history showed that she came of a markedly gouty or rheumatic family, and that she herself had been much troubled with rheumatism when young, but not at all since the beginning of this attack. She had had scarlet fever badly when a girl, and also "gastric fever."

Her sister says that as a girl she might have been described

as *petite*, with small feet, and hands which took a 6½ glove, and that she was the possessor of an excellent voice for singing. An old photograph quite bears out the description, and also shows that, while she had a good chin, there was nothing remarkable about the appearance of the face.

There is nothing to account for the onset of the disease. The first thing that she noticed was the loss of the high notes of her voice, and about the same time, 1879, there was a gradual enlargement of the neck. In 1881, when she was, it will be remembered, thirty-five years of age, the menses suddenly stopped without any obvious cause, and, with the exception of one slight discharge, they have never reappeared. This early stoppage of the catamenia seems to be one of the constant symptoms in the cases occurring amongst females recorded by Marie.

Since that time there has been noted a gradual increase of the swelling of the neck, and enlargement of the face and the extremities, with a diminution, observable by all her friends, in the stature, and increasing weakness, so that she was described as "going about like an old woman," her back becoming curved, and her gait feeble and unsteady.

Her present state is as follows:

Bones.—The lower jaw is very massive, the teeth spreading out in a remarkable way, so that they will not nearly meet those of the upper jaw, which are not much, if at all, affected. The interval between the two rows is fully ¾ of an inch in the middle line.

The head could not be carefully examined, but is not obviously enlarged, so that the shape of the face corresponds exactly with that described in Marie's paper, that is, it has the shape of an egg with the large end downwards, exactly the opposite condition to that which is found in osteitis deformans, and contrasting markedly with the full-moon face of myxœdema.

The clavicles are massive and their curves prominent.

The ribs are also large and very prominent at their junctions with the cartilages, so that the sternum appears to be sunk in a hollow.

The scapulæ have all the bony prominences exaggerated, and the same overgrowth of all the normal ridges is well marked in the humeri, especially at their lower ends, and also in the bones of the legs and forearms, but there is nothing of the long curves or thickening of the shafts which are characteristic of osteitis deformans.

The hands and feet have much increased in size and notably in breadth, so that the patient has been obliged to wear larger and larger boots. This change appears to have resulted from a thickening of the metatarsal and metacarpal bones, and also of the phalanges, which are knobby and rough; and it is clear that similar changes have occurred in the tarsal bones, for the prominences such as the peroneal tubercles, are enormous.

In the spine there is a marked exaggeration of the dorsal curve, so that at first we suspected caries, but she herself had not observed the change although she acknowledged that she had grown shorter.

The *cartilages* of the ears are quite stiff and hard; those of the nose were not examined, but are probably enlarged; those of the larynx were so obscured by the large thyroid that their state could not be ascertained.

The *skin and subcutaneous tissue* are apparently quite normal, except perhaps in the face, where the skin appears coarse, and the orifices of the sebaceous glands are very apparent. The surface is moist, and there is most copious perspiration. She is always complaining of heat, and insists upon open windows and light covering even in cold weather. The subcutaneous tissue is scanty as the result of emaciation.

The *muscles* are all much wasted.

Senses:

Hearing is quite normal.

The sense of *smell* has almost gone. The power of perceiving delicate scents, such as that of flowers, has quite disappeared.

Taste is much impaired. Everything tastes salt. She cannot at all appreciate delicate flavours, and says that hare soup tastes just like ordinary beef-tea. The tongue is very large and thick.

Vision is good. She has a little squint, but I do not know if this is an old condition. There is slight prominence of the eyeballs, probably exophthalmos.

The sense of *touch* is apparently normal. She is an ardent musician, and though she can no longer sing, as her voice is harsh, metallic, and monotonous, and she has no high notes, her great delight is to play the organ, which she can do, in spite of her clumsy hands, as well as ever.

Respiration.—The breathing is husky, no doubt from pressure on the trachea, and there is a constant slight metallic, laryngeal cough.

The general condition is one of marked and increasing feebleness. She shuffles about like an old woman, and is soon exhausted. The appetite is poor, but there is excessive thirst. The pulse is rather rapid, soft, and feeble. The temperature normal. The urine contains neither albumen nor sugar.

The *intelligence* is perfect, and the disposition placid and on the whole cheerful.

I cannot close this paper without referring—

1st. To the apparent connection of this remarkable change in the bones with an abnormal state of the thyroid body. In most if not all of the recorded cases the thyroid was either enlarged or very small. One cannot help thinking in this relation of the cases of malignant tumours of the thyroid possessing the structure of the normal thyroid glands, and their strange tendency to recur in bones.

2nd. To the connection between an abnormal state of the thyroid and the early arrest of the catamenia, also apparently a symptom of this disease.

3rd. To the seemingly close relation of this disease to osteitis deformans, and yet the remarkable differences between the two conditions.

4th. To the superficial resemblances between acromegaly and myxœdema, and the association of both with modifications of the state of the thyroid body.

Since writing this paper my attention has been drawn to a very important communication on this subject by Prof. Dr. W. Erb, of Heidelberg, "Ueber Akromegalie (Krankhaften Riesenwuchs") *Deutches Archiv für klinische Medicin*, October, 1887. It is a most exhaustive and interesting account of the present state of our knowledge of the disease. He describes in great detail one case, that of a woman, æt. 58, who came under his own observation, and also the present state of the two brothers described by Friedrich in 1867, who are still alive. Another case, a man æt. 38, which has been observed by Minkowski and described by him (*Berliner klin. Wochenschrift*, 1887, No. 21), is also referred to, and brief notes of the other now pretty well-known cases, 7 in all, are added. Thus, adding Dr. Hadden's case and mine, there are now 13 cases, agreeing more or less in general characteristics, for reference. Of these 8 were males, 5 females, and the ages were as follows:

Between 10 and 20, 3 cases, aged 15, 17, 18.
„ 20 and 30, 3 „ „ 21, 24, 28.

Between 30 and 40, 5 cases, aged 31, 32, 32, 36, 36.
„ 40 and 50, 2 „ „ 47, 48.

He arranges in a judicious manner the symptoms, which are apparently fairly constant, distinguishing them from others which are less frequently observed, and draws particular attention to the fact that in 3 cases which have been examined post-mortem by Brigidi, 1887, Henrot, 1887, and Fritsche and Klebs, 1884, there was marked enlargement of the pituitary body. The possible relation of this enlargement of the pituitary body to a common symptom, viz. loss of sight, cannot be overlooked. Erb noticed in the three cases which he had himself observed marked dulness behind the manubrium sterni, and whilst allowing that such an observation must be received with caution, he is evidently disposed to think that it may depend upon an enlargement of the thymus body such as was noted in the autopsy made by Fritsche and Klebs in their case referred to above.

XLII.—*A Case of Acromegaly*. By W. B. Hadden, M.D., and C. A. Ballance, M.S. *Read April* 13, 1888.

THE following case was described by card before this Society on January 23, 1885 (see *Transactions*, vol. xviii, p. 325, "A Case of Hypertrophy of the Subcutaneous Tissues of the Face, Hands, and Feet"). About fifteen months later a brief paragraph appeared in the *Lancet* (April, 1886), headed "Acromegaly," and under this name we found that M. Marie had described a morbid state which tallied very closely with our case (*Revue de Médecine*, April, 1886). In view of the importance of our observation, as it now appears, we deemed it advisable to exhibit our patient once again to the Society, to reproduce our original account, and to put forward briefly the salient points of a condition which, in all probability, has a clinical and pathological history of its own.

The patient is a married woman, and is now 37 years of age. She has had three children in ten years, but no miscarriages. There is nothing noteworthy in her family history.

Up to four and a half years ago she had had no illness, and was a strong, hale woman. Scarlet fever then broke out in the house; one of her children died, and the patient herself had sore-throat, but no rash. Following on this attack she had swelling and pain in both knees, and, from her description, the affection seems to have been rheumatic. A little later the hands began to swell, but the face was not involved.

The patient naturally enough ascribes her present condition to the scarlet fever, though it must be mentioned (and the fact, as will be seen later, is of significance) that she had previously suffered from tingling sensations in the hands, and that the catamenia had ceased a few months before the attack of scarlet fever, and have never reappeared.

On comparison with a photograph taken a few months before the scarlatinal attack, the face is seen to be markedly changed. In striking contrast with her former condition, she is now a big-featured person, with a broad nose, prominent cheek bones, square, massive, and protruding lower jaw, and thick, everted lower lip. The condition of the nose is dependent

on hypertrophy of the nasal cartilages and of the tissues over them, the nasal bones being unaffected. The enlargement of the upper and lower jaw-bones is uniform, and seems to be due to simple hypertrophy. The skin of the face, though pale, presents no obvious alteration. Beneath the eyes there is distinct fulness, but no unusual pallor or translucency, and the circumscribed redness, so commonly seen in myxœdema, is absent. The cranium is natural, and the woman asserts that she has not been obliged to alter the size of her bonnets. The neck is full and short, the subcutaneous tissue over-abundant, and beneath the chin there is a pendulous, soft mass, probably fatty. No enlargement of the submaxillary glands can be detected. The thyroid gland is not to be felt; but it cannot be said with certainty that it is atrophied, since palpation is difficult in consequence of the fulness of the neck. There is slight fulness above the clavicles, and these bones are much curved, and distinctly larger and thicker than normal.

We shall now proceed to describe the most striking clinical characters of this condition, and we may here remark that the name "Acromégalie" (*ακρον*, extremity; *μεγαλη*, large) was suggested by Marie in consequence of the remarkable enlargement of the hands and feet. In our patient the hands are gigantic, though in no way deformed. The hypertrophy appears to be general, but the subcutaneous fatty tissue is probably disproportionately thickened, especially along the inner border of the hand. This overgrowth of fatty tissue is noted in one of Marie's cases. The metacarpal and phalangeal bones are large; their outlines natural. The skin of the hands is moist and in every respect natural; the wrinkles are present on the backs of the fingers. The nails are large and broad, not otherwise affected. Formerly the patient used to wear No. 7 gloves. The measurements are now as follows:— Circumference at metacarpo-phalangeal joints: right hand, 9⅜ inches; left hand, 9¼ inches. Circumference at centre of metacarpal bones: right hand, 9¾ inches; left hand, 9½ inches. The right middle finger is 4¼ inches long; the left 4⅛ inches. Broadly put, we may say that the increase in the circumference of the hand is 2½ inches. There is no enfeeblement of the grasp, and the woman says that she can use the hands, even for threading a needle, as well as ever she did.

The enlargement of the feet is in proportion even greater than that of the hands. She used previously to wear large 4 boots, afterwards large 6, and now she wears large 8. At the root of the toes the right foot is 10½ inches in circumfer-

ence, and across the centre of the sole 11¼ inches. There is much subcutaneous fatty tissue along the outer border of the foot on the plantar surface, and below the internal malleolus, but very little over the dorsum. The thickened parts form pads, which can be readily taken up by the finger and thumb. As in the case of the hands, there is no deformity of the feet; they are simply gigantic, and nothing more. In marked contrast with the enlarged hands and feet, the forearms and legs exhibit no increase in size.

The skin everywhere is soft, supple, moist, and in every respect natural. The hair on the scalp is soft and glossy, and has no tendency to become brittle or to fall out. The speech is not slow, but it is distinctly guttural. She articulates every word perfectly.

It may be mentioned here that the patient first came under the notice of Mr. Ballance for enlargement of the tonsils, which was of such unusual extent that there was interference with speech, deglutition, and respiration. Though the tonsils were removed the speech still remains affected.

The tongue is large, probably hypertrophied. The soft palate is normal. The heart and lungs are natural. There is no reason to believe that the thymus gland is enlarged, the percussion note over the upper part of the sternum being natural. The abdomen was not examined. No albumen has been found in the urine.

So far as we can ascertain there exists nothing abnormal in the size or distribution of the large arteries of the upper extremities. Briefly, the enlargement of the hands is not accompanied by any appreciable change in the vascular supply. The patient was unwilling to allow anything but a cursory examination of the lower extremities; but so far as we could make out there was no abnormality in the size of vessels, and there were no varicose veins. (Plate VI.)

We have recently discovered that the patient is almost completely blind with the right eye. The date of failure is uncertain, but she believes the sight has been dim since she had what she called diphtheria three years ago. Four months since she discovered that the sight was nearly gone.

There is no history of right-sided headache. Mr. Nettleship kindly made an ophthalmoscopic examination, and reported as follows:—"There is very little direct action to light of the right pupil, but the indirect action is good. There is blue-white atrophy of the right optic disc; the veins are very tortuous, and there is a little tissue at centre of the disc.

There is a single pigment spot on choroid a little above disc. The arteries are normal. There are no other appearances like neuritis. The left optic disc is natural." Mr. Nettleship was of opinion that there had probably been neuritis of the right optic nerve.

In concluding our description we must note that common sensation is intact, that the muscular power is good, that there is no wasting of the interossei or other muscles, that the intellectual processes are unimpaired. In our patient there is no tendency to free perspiration, no excessive thirst, no falling forwards of the head on the sternum, no headache, no general pains, conditions observed by Marie in one or other of his cases.

The clinical state which we have just given accords in all essential points with the two cases described by Marie. We must observe, however, that, assuming the affection to be a distinct morbid entity, there is no reason to believe that it is a "new disease." Marie has collected five instances published by various authors. One was described by Saucerotte in 1772, and another by Alibert in 1822. In Fagge's *Principles and Practice of Medicine*, under the head of sporadic cretinism and the cretinoid state of Sir Wm. Gull (vol. i, p. 757), allusion is made to a case under the care of Dr. Wilks, which was probably an instance of acromegaly. "Her features underwent a most remarkable change, and she became so hideous that the boys shouted at her when she showed herself in the streets. Her face became elongated, and her nose, lips and mouth were enormous. There was not the slightest infiltration or hardening of the skin or subcutaneous tissue. She also had amaurosis, but this was perhaps an independent affection." In a footnote it is further stated that the patient was a young lady of 28, that she had suffered from neuralgia, and that she had gradually become blind. Her features were swollen, and her hands could not be fitted with ordinary gloves. The urine did not contain albumen. After six years, she died comatose. There was no post-mortem examination.* The main clinical

* Dr. Wilks has kindly furnished us with a few particulars regarding this patient. She was very reluctant to be examined, and therefore her body was not looked at, but her mother said the skin was thickened in other parts besides the hands, feet, and face. Dr. Wilks writes, "She was amaurotic from, I believe, optic neuritis, and had constant headache, for the relief of which she came to me. I saw her several times during the year, and nearly all this time she took arseniate of soda. The headache was much relieved, and the mother thought the skin and general condition were better. I saw her last on April 30, 1870, when she went to live in the country, and I heard afterwards she had died in a state of coma. My belief at the time was she had a tumour of the brain."

features of acromegaly have already been sketched out in the foregoing description. It now remains for us to emphasise the main characteristics of the affection, and to discuss briefly its nature.

It would appear that both sexes are liable to be attacked, and that the disease may arise between the ages of fifteen and sixty. As regards antecedents, rheumatism was noted in one of Marie's cases, and our patient describes a swelling of both knees, probably of rheumatic nature. It is interesting to observe (though at present it is impossible to determine the significance of the fact) that in both of Marie's cases, and in our own case, the catamenia disappeared at the onset of the symptoms. Clinically, the disease is characterised by a general enlargement of the hands and feet, the hypertrophy being uniform and without deformity. The physiognomy becomes altered chiefly from hypertrophy of the bones of the face, of the nasal cartilages, and sometimes of those of the eyelids.* The clavicles, the ribs, the patellæ, and the iliac bones may also undergo hypertrophy; but it is important to bear in mind that the long bones, which are mainly involved in osteitis deformans usually remain unaffected in acromegaly.

In addition to the fibro-cartilages of the nose and eyelids, those of the ears and possibly the thyroid cartilage become hypertrophied. It is probable that the optic-nerve affection which we have described is not accidental. In one of Marie's cases there was loss of vision, but unfortunately there were extensive opacities of the cornea which prevented an ophthalmoscopic examination. It will be remembered, too, that in Dr. Wilks's case, to which allusion has been made, complete blindness ensued.

It will naturally be asked, Is this condition a distinct morbid entity unrelated to either myxœdema or to osteitis deformans, to both of which it undoubtedly has certain points of resemblance?

In acromegaly, it is true, the extremities are hypertrophied, but there is not, as a rule, a general increase in bulk, as seen in myxœdema. Again, in acromegaly the skin usually presents no alteration, and its functions are unimpaired, except that perspiration may be excessive. The hair, like the skin, exhibits none of the changes so frequent in myxœdema. The features in our patients do not present the cretin-like aspect, pathognomonic of myxœdema. The bodily and mental torpor,

* Marie mentions hypertrophy of the vault of the skull, especially of the frontal eminences, but this is not present in our patient.

which are rarely if ever absent in this latter disease, even in the initial stages, are certainly not usually, and it may be not ever, a feature of acromegaly. We have been unable to obtain information as to the temperature in our patient, and Marie does not appear to have paid special attention to this point. It would clearly be of the greatest importance to acquire details on this matter in future observations.

Lastly, we must mention that in myxœdema the bones are not hypertrophied, and that disease of the optic nerves, such as we have described as occurring in our patient, is a rare, perhaps an unknown condition.*

But in acromegaly and in myxœdema there is an important common condition, to which as yet we have barely alluded. It appears that in every case of acromegaly in which special attention was directed to the point, the thyroid gland appeared abnormal. In our patient and in Marie's two cases it is not to be felt.

In 1877, Henrot, of Rheims, published a case† which is of the greatest interest and importance. This gentleman communicated his observation to the Myxœdema Committee appointed by this Society, and although it seemed to be of somewhat doubtful nature it was included in the tabulated returns. There is now little doubt that this was an instance of acromegaly.

The patient died, and the result of the autopsy was as follows. The thyroid gland was four or five times the normal size; unfortunately no microscopical examination seems to have been made. There was marked hypertrophy of the entire sympathetic system, both ganglia and nerves, of the brachial plexus, and of several cranial nerves. The skull was natural, except the sella Turcica, which was much enlarged, and the margins of which were considerably thickened. In the situation of the pituitary body there was an ovoid tumour, the size of a small hen's egg, which had pressed on the optic chiasma, flattening it out, and causing great atrophy. Laterally, the tumour had excavated the temporo-sphenoidal lobes. The infundibulum was much larger than normal, and the pineal body at least double its ordinary size. We must call attention in passing to the significance of the morbid change in the pituitary body

* See, however, *Boston Medical and Surgical Journal*, Jan. 1st, 1885, "A Case of Myxœdema with Atrophy of the Optic Nerves." It is possible the case was one of acromegaly.

† *Notes de Clinique médicale*, par le Dr. Henrot, 1877, Rheims; also *Notes de Clinique médicale; Des lésions anatomiques et de la nature du Myxœdème.*

in relation to the optic-nerve affection in our patient, and of the blindness in the cases observed by Dr. Wilks and by Marie. In Henrot's case the sight was affected, but he gives no particulars on this point, and there does not seem to have been an ophthalmoscopic examination. Microscopically, the enlargement of the cervical sympathetic was found to be due to hypertrophy, affecting the ganglionic cells to a greater degree than the nerve-fibres. The posterior part of the pituitary body contained large oval cells, with one or more nuclei. The various parts affected were sent to the Collège de France for complete examination.

In addition to the changes already mentioned, extensive alterations were found in connection with the bones. The small bones of the hands and feet had undergone general enlargement. Numerous osteophytes were found on the lower jaw, the hyoid bone, the tibia, the fibula, the ulna and the radius. These bony outgrowths were developed wherever there was normally any prominence; they were especially evident at the points of attachment of the ligaments and tendons; and they were more marked in the lower limbs than in the upper. Bony plates were found also on the surface of the pia-arachnoid of the spinal cord. Lastly, it may be mentioned that the cartilages of the larynx were ossified, and that the natural prominences were much more marked than normal.

The points of difference between acromegaly and osteitis deformans are numerous. It will be sufficient to mention that in the disease described by Sir James Paget, the bones are not simply enlarged, but also markedly deformed, and that the mode of invasion is not characterised by the symmetry seen in acromegaly. Although it would be premature to assert that the long bones of the extremities are not liable to undergo hypertrophy in acromegaly, there is little doubt that this is not usually the case. On this point more extended observations are wanted.

In osteitis deformans the bones of the cranium frequently undergo remarkable increase, whereas the bones of the face, if enlarged, are but slightly so. In acromegaly the exact contrary holds good. Marie points out that in osteitis deformans the face is triangular with the base upwards; in acromegaly it has the form of an elongated ellipse, whereas in myxœdema it is round like the full moon (see Fig. 9).

It is unnecessary, in our opinion, to dwell on the various points of difference between acromegaly and such conditions

as Virchow's leontiasis ossea and various kinds of local hypertrophy, bony or otherwise.

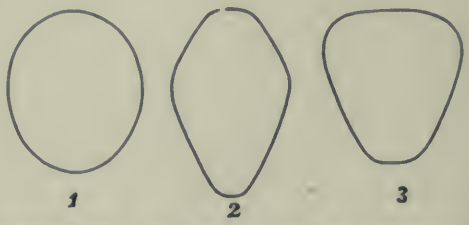


FIG. 9.—Outline of face in—1. Myxœdema; 2. Acromegaly; 3. Osteitis deformans (after Marie).

We venture to express the opinion, based chiefly on clinical considerations, that what has been called acromegaly is a distinct disease, having no real affinity with either myxœdema or osteitis deformans.

As regards pathology we have nothing definite to add, but Henrot's case indicates the line of inquiry to be adopted. At present it cannot be said with any certainty that the disease is dependent on morbid change in the thyroid gland, pituitary body, or sympathetic nervous system.

DESCRIPTION OF PLATE VI.

Dr. Hadden's and Mr. Ballance's Cases of Acromegaly.

FIG. 1 shows the enlargement of the nose, the prominence of the cheek bones, the thickened and everted lower lip, and the hypertrophied lower jaw. The figure also shows the enlargement of the hands as seen on the dorsal aspect.

FIG. 2.—Palmar aspect of hands.

FIG. 3 shows the hypertrophy of the feet.

Fig. 1.

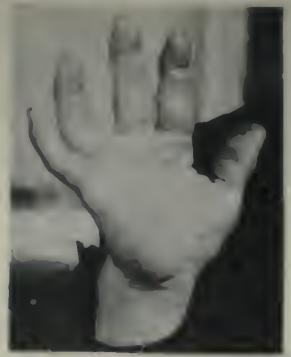


Fig. 2.

Fig. 3.

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XLIII.—*Acute Periosteal Swellings in several young Infants of the same family, probably rickety in nature.*

By Samuel West, M.D. *Read April* 13, 1888.

FRANCIS T., æt. 5 weeks, was brought to the Royal Free Hospital by the mother, with the statement that the child's left arm had "dropped."

On examination, the child was found to have a great swelling of the left humerus, which was exquisitely painful on touch and movement. The swelling involved the middle two thirds of the shaft and was apparently almost entirely periosteal, tense, hard, and spindle-shaped. The skin was red over it and it felt hot. There was no affection of the elbow or shoulder-joints. The slightest touch or movement of the arm made the child scream with pain.

On the right humerus a similar periosteal swelling was found occupying the middle third, a little irregular in shape, but harder and denser and not painful to touch.

A third swelling of the same kind was found on the left femur in the middle third, but not tender or painful, though the leg was kept flexed and the knee bent.

There were some slight nodular enlargements on the ribs but no other evidence of rickets. The child was well developed and well nourished, and there was nothing special to note in the appearance except that it seemed to be suffering pain. It had not suffered from diarrhœa; the mouth was clean and the gums natural. I did not learn that there had been any special head- or body-sweating. The head was well formed and had no bosses on it; the temperature could not be taken, and as the mother would not leave the child and could not come in with it there is no record of temperature.

This was the fifth child in the family, born at the eighth month and fed on the breast only. It seemed perfectly well at the time of birth and for the first few days. The first lump came on the ninth day on the right humerus; it was extremely painful and the arm "dropped."

The second swelling came on the left femur one week before I saw the child, *i. e.* when it was four weeks old. The third came on the left humerus two days before I saw it. The

treatment consisted in the administration of some cod-liver oil and a little iodide of potassium, and the mother's milk was supplemented with cow's milk.

On October 20, a fortnight after the first visit, the child had greatly improved and the pain was much less.

On November 14, the lump had almost gone from the right femur, and though a slight thickening could be felt it appeared to be otherwise normal. On the right humerus nothing was to be found except a very slight thickening in the seat of the previous swelling. The left humerus was still a little swollen and painful on handling. A few days before, the child seemed to be tender over the ribs, but no lumps were to be found there.

On December 8, the child was well and lively. The lumps were much smaller but could still be made out, and the left humerus was still a little painful on pressure.

On May 4, the lumps had entirely disappeared except on the left femur, where the thickening could still be traced. The child had been in excellent health, and had developed well.

The family history was as follows:—There are five children. The eldest, 9 years old, was an eight months child, a large and well-formed boy. When a week old the right arm dropped exactly as in the present case. It was said to be broken by the doctor, and after fruitless attempts to set it the child was taken to the Children's Hospital in Great Ormond Street, and soon recovered. At six years of age it had an empyema, for which it was treated in that hospital for three months, leaving quite well. The lad was brought for my inspection, and was found to be a fairly-developed boy. The bones of the arm and legs and the ribs were well formed and presented no abnormality, and the empyema was perfectly recovered from.

The second child, now 7 years old, also a boy, had an attack of bronchitis when 6 months old, and has suffered from it occasionally since, but never had any affection of the bones.

The third child, a girl now 5½ years old, had the thigh, the mother does not recollect which, affected at the age of six weeks. This was also said to be broken. There remains now no trace of the affection.

The fourth child, a boy now 3½ years old, had the left humerus and tibia affected in this way on the fifth day after birth, and these swellings took more than two months to subside to any appreciable extent. In the third week the right tibia became similarly affected, and at six months the left thigh. The child was an out-patient at the

Children's Hospital on and off for twelve months. I saw the out-patients' letter, and the description written on it agreed with that given of the present case.

This and the third child were, I believe, under the care of Dr. Lee and Dr. Abercrombie.

The last child when seen was markedly rickety. Both femora were bent forwards, and were still considerably thickened, and the ribs were somewhat beaded. All the children were bright and intelligent. There had been one miscarriage before the last child, brought on by lifting heavy weights.

There was no history of syphilis on either mother's or father's side and no evidence or suspicion of it in parents or children. The mother was a very respectable, hard-working woman, and affectionate to her children, and though poor and probably underfed herself, had always been able to provide the children with sufficient food she said, and she had suckled each of her children for some months. The husband, though not strong, had not been under the doctor. The mother I also examined carefully, and found no actual disease in her, though she looked worn and pale; she was suckling at the time. As is evident from the ages of the children, the pregnancies had not followed each other with any remarkable rapidity. It may be stated here that about nine months later she brought up some blood, and had slight signs of phthisis at one apex, but the mischief did not progress, and when seen quite lately she had gained much flesh in spite of being again pregnant.

Case 2.—On December 31, 1887, the wife of George T—, the brother of the father of the previous cases, brought her infant to see me, who was suffering from the same affection.

The child, a girl, was 3 weeks old. It was born at full time and appeared healthy and well formed, and was nourished on the breast only, which it took readily. When it was fourteen days old the arm "dropped," as in the previous cases, and on the 31st, a week later, I saw it. It was a fat, healthy-looking child of average weight. It did not move the left arm, and cried when it was touched. On examination, a hard swelling was found on the left humerus, painful and exquisitely tender, occupying the middle third. The swelling was chiefly on the outer side, and the bone on the inner side could be clearly made out to be straight and unbent. The swelling was of exactly the same character as in the previous cases but was not quite so large or tender.

January 11.—The child was again seen. It looked and was

well. The arm was still painful to movement and touch, but less than it had been. The swelling also was getting smaller. The left arm measured about a quarter of an inch more than the right.

January 25.—The child looked very well and moved the arm freely without pain. The swelling was very much smaller, and was felt only on the outer side of the shaft; on the inside the shaft was quite smooth and straight. The child received no medicine, and was suckled without interruption, and nothing was done to the arm beyond binding it loosely to the side. The patient was the fourth child in the family.

The first was a girl, æt. 6; she was and had always been quite healthy.

The second, a boy æt. 4, had both arms and legs affected in the same way at about the same age. He got perfectly well. He was seen, and found to be well grown and healthy, and no trace whatever of the past bone affection could be found.

The third child, a girl æt. 2, was and had been always quite well.

The parents seemed to be strong and healthy, as far as I could learn; and the mother, whom I saw, was a robust woman.

I believe all these cases to be rickety in nature. Acute they certainly were, and the term acute rickets naturally suggests itself as the appropriate one by which to describe them. This term has, however, been used to denote a class of case which in some more or less important particulars differs from those at present under consideration; still I may say at once that I consider my cases to belong to the class of acute rickets. Dr. Barlow published in the 66th volume of the *Medico-Chirurgical Transactions* a very important paper under this title, giving a complete table of the cases recorded up to that date. My cases differ from those there recorded in the following respects:

1st. In regard of age. In Dr. Barlow's series there is only one case in which the disease was met with in a very young infant, most of the children being several months old, and some even a few years old.

2nd. There is no instance in which more than one member of a family was affected.

3rd. The difference in mortality is remarkable. In Dr. Barlow's series, seven patients died out of thirty-one, yielding a mortality rate of 22 per cent., but among the cases here

recorded, no death occurred, nor were any of the patients, so far as I can learn, at any time in danger.

Lastly, although the children were ill there was an absence of the cachexia which was conspicuous in Dr. Barlow's cases. The evidence, however, of rickets in the family is clear, and one of the children is much disfigured in consequence.

If rickets were not the cause it is difficult to find any other. Injury will not explain the affection, for of this there was no history or evidence, and it seems incredible that accidental violence should be done to so young a child tended by its own mother on so many occasions, and no suspicion of it enter the mother's mind.

The only possible injury would be a green-stick fracture, and this it could not be, for the bones were not in any way bent, and they recovered without deformity in a short space of time, and without any special treatment.

Of syphilis there was absolutely no evidence or history. I went into this question with great care. The father was a very intelligent man and assured me that it was impossible. The mother had had one miscarriage, but that she attributed to lifting heavy weights, and I failed to find the slightest evidence of syphilis in either of the parents, or in any of the children. Moreover the cases did not present at the time the features, nor did they run the course subsequently, of hereditary syphilis, and I should apply to my cases the remarks which Dr. Barlow makes in regard to his own, viz., "I can only say that I have never seen a syphilitic case of this character lying prostrate with the pain, tenderness, and cachexia comparable with that we have already considered, but that in fact the general suffering and the progress are quite different." So far as treatment may be taken as a test it also is opposed to the diagnosis of syphilis, for although I gave small doses of iodide of potassium to the one, I gave no medicine at all to the other, and recovery was in each case equally rapid and complete.

If, then, these cases are, as I believe, instances of acute rickets, another question remains to be considered which was raised by Dr. Barlow in the paper referred to, viz. its relation to scurvy. Of this affection there was no evidence in the cases observed, and no reason to suspect its existence in the other children. There was no stomatitis or sponginess of the gums, no petechiæ or bleeding from any surface, no special dyspeptic disturbance, and no profound cachexia; moreover,

the children were very young, and nourished entirely by the breast.

The comparative rarity of the affection under consideration makes it improbable that the experience of any one person should be large, but it has been my fortune to see one other instance of it in a child, a patient of Mr. Herbert Page, by whom the case is fully described in the same volume of the *Transactions* as contains Dr. Barlow's paper, and which Dr. Barlow, I believe, regards as a characteristic example of acute rickets. Except in respect of severity that case resembled very closely those which form the subject of the present communication.

XLIV.—*A Case illustrating the Advantage of Early Incision into the Hip-joint with Drainage as opposed to Excision.* By B. Wainewright. *Read April* 27, 1888.

Arthur G—, æt. 3, was admitted into the West London Hospital on March 13, 1886, suffering from swelling about the right knee, with pain and stiffness, which was stated to have commenced about a fortnight before and to have been the result of a fall at that time.

On admission, he was seen by the house surgeon and treated by him with a back splint and ice-bags applied to the knee. There is no note as to whether there was fluid in the joint. This treatment was continued for ten days, with the result that the swelling about the knee decreased, but the thigh became affected.

At this time I saw him first. He was an extremely emaciated and unhealthy-looking child. His temperature varied in the evening from 100° F. to 101° F., falling to normal every morning. He is one of three children. The other two are quite healthy, but the mother states that they were all puny children at first but became stronger afterwards. She has had no miscarriages, and she says that none of the children have suffered from snuffles or eruptions about the body.

I cannot obtain any history of phthisis either in her family or in that of her husband.

On examining the left thigh I found a tense swelling occupying the whole of the external aspect, in which deep fluctuation could be clearly made out. The knee was slightly enlarged, but there was no effusion into the joint. The abscess was at once opened antiseptically by a small skin incision in the centre of the outer side of the thigh. The vastus externus was then perforated with dressing forceps, after which the finger was introduced, giving exit to about a pint of thin pus. The femur could now be felt with its periosteum apparently intact, and the finger moved in a large cavity beneath the muscle extending up to the great trochanter and down nearly to the knee-joint. There was, however, no communication with the joint.

A large drainage-tube was inserted, and an alembroth dressing applied. The temperature at once became normal, and remained so, the wound healing without further suppuration and all enlargement of the thigh disappearing. There remained, however, some thickening about the knee.

On April 9 (seventeen days later), before the wound in the left thigh had quite closed, tenderness and slight swelling of the right hip with flexion was observed, accompanied by pain in the right knee. The child was very restless and cried out frequently. Temperature normal. Extension by a weight was applied to the right hip. This seemed to give temporary relief. Three days later the temperature began to rise slightly at night.

On April 30 (ten days later), the left knee felt hot and was tender to the touch. Extension was applied to left knee. Six days after this, deep fluctuation was discovered in the right hip.

On May 10 (about two months after admission), there was well-marked fluctuation in the right hip, which was much enlarged, the skin being tense and reddened. For the last month the temperature had risen at night, but never higher than 100·5° F.

I now determined to incise the right hip-joint, which was done by an incision about 1½ inches long, over the front of the neck of the femur, through skin and fascia. Dressing forceps were then passed through the distended capsular ligament between the tensor fasciæ femoris and sartorius; after which the finger could be easily introduced into the joint. A considerable quantity of sero-purulent fluid now escaped, and so great had been the distension of the capsule that it was possible to insert the finger between the head of the femur and the acetabulum, the cartilage on both of which was found to be intact as well as the ligamentum teres. The synovial membrane also felt natural.

But on the anterior surface of the neck of the femur there was a circumscribed patch of caries as big as the tip of the finger. This was gouged out with a Volkmann's spoon. Two drainage-tubes were inserted, and an alembroth dressing applied. The operation was done antiseptically. The dressing was changed next day. There had been a free discharge of blood-stained serum, but no pus. The temperature again became normal, and the child looked much better.

Three days later one tube was removed, and the remaining one was taken out after a fortnight. Meanwhile, the left

knee had not been progressing favorably. It has been put up in a Scott's dressing, but when this was taken off on May 31 (about three weeks after the operation on the hip), the joint was found to be much swollen and reddened on the surface. The temperature still remained normal.

On June 5 (the wound in the right hip being now completely healed), I determined to explore the left knee. An incision was made across the front of the knee from condyle to condyle dividing the ligamentum patellæ about its centre, and the patella was thrown up. The limb was rendered bloodless by the use of Esmarch's compressor. The state of the joint was found to be as follows. The cartilages were almost entirely covered by an overgrowth of the synovial membrane, which dipped slightly into but had not yet destroyed them. The supra-patellar pouch was also obliterated, being filled with the same pulpy tissue. The crucial and lateral ligaments were not much affected. There was no fluid in the joints. The pulpy tissue was now cut away as thoroughly as possible with the sharp spoon and scissors, the cartilages being cleared, and the suprapatellar pouch re-established.

In doing this a considerable portion of the internal semilunar cartilage was accidentally removed. The joint was then well washed with 1 in 500 sublimate solution and the ligamentum patellæ was sutured with chromic gut, which was also used to suture the skin. Two drainage-tubes were inserted and a posterior bracketed splint applied. After this operation the temperature rose slightly at night, but the wound remained quite aseptic, and after a few days the temperature became normal.

Great and rapid improvement now took place in the child's health, and he became much fatter.

On July 29 (about eight weeks after the last operation), he was discharged with a plaster case on the left leg, and perfect movement of the right hip. Owing to the temporary closure of the West London Hospital I lost sight of this patient for a time, and he did not come under my care again till February 21, 1887, nearly a year after his first admission. The right hip was still perfectly healthy, and had full movement in all directions. The plaster splint had been removed from the left leg by his parents, without orders, and consequently some flexion and displacement backwards and laterally had taken place. The disease in the joint, however, seemed to have been completely arrested.

He was readmitted on account of a sinus which had formed about an inch above the external condyle of the femur. The opening was surrounded by sprouting granulations, and discharged a small quantity of thin pus. Temperature normal; child much improved in health. No bone could be felt by probing.

On February 25, I opened up the sinus, and removed two scales of necrosed bone about the size of a finger nail, which lay in a cavity lined with granulations. The sinus then closed, and he was discharged on April 2 (two months later) with a plaster splint. The leg had been got into somewhat better position by extension. There was slight movement in the joints.

I have thought his case of sufficient interest to bring before the Society on account of the remarkably happy result of early incision and scraping of the right hip-joint. The same method also yielded a fairly good result in the left knee, though inferior to that of the right hip, and both seem to me immensely superior to the ordinary result of excision. There is doubtless nothing new in this, but I think early incision is hardly practised as frequently as it deserves to be.

It seems also worthy of note that each operative interference was followed by no constitutional disturbance, but by immediate relief of local symptoms, and also by a marked improvement of general health.

The occurrence of acute caries and suppuration in the right hip-joint without injury, and whilst the patient was completely at rest is also remarkable though by no means unique.

The whole course of the case suggests to my mind a tubercular origin; first localised in the cellular tissue of the left thigh through an injury, then attacking in succession the bone in the neck of the right femur, and lastly, the synovial membrane in the left knee. I look upon the small exfoliations from the left femur as probably connected with the injury that caused the abscess in the left thigh. I regret that no search was made for the tubercle bacillus; therefore, my explanation of the pathology of the case is merely theoretical.

XLV.—*On Perihepatitis, with an Analysis of Forty Cases.* By W. Hale White, M.D. *Read April* 27, 1888.

GEORGE B., æt. 29, a sailor, was admitted into Guy's Hospital August 4, 1887. He had been all over the world and in many hospitals, having always had bad health and having suffered several serious accidents. He is said to have had ague, dysentery, and rheumatic fever. Two years ago he was in the Rotherhithe Infirmary for what he says was rheumatic fever. During his convalescence he became dropsical; after being there seventeen months and being frequently tapped he went to St. Bartholomew's, where he was tapped, and where he remained two months; shortly after leaving there he came to Guy's. Before his admission into the latter hospital he had been tapped thirty-four times. He denies having had syphilis, but his wife has miscarried. She gives a clear specific history, and the patient has had amygdaloid glands in the groin.

The following is a list of the tappings which took place in the Rotherhithe Infirmary:

Date.	Quantity drawn off.
1885.	
Dec. 25	18 pints.
„ 30	17½ „
1886.	
Jan. 14	19 „
„ 23	22 „
Feb. 1	19 „
„ 10	19 „
„ 19	20½ „
„ 26	17½ „
March 8	23½ „
„ 19	21 „
April 2	22 „
„ 14	25 „
„ 27	21 „
May 12	26 „
June 1	20½ „
„ 15	26 „
1886.	
June 28	27 pints.
July 14	31½ „
„ 28	27 „
Aug. 18	30½ „
Sept. 1	21 „
„ 12	18½ „
Oct. 2	26 „
„ 20	28 „
Nov. 6	22 „
Dec. 11	20 „
„ 24	21 „
1887.	
Jan. 12	23½ „
„ 28	23 „
March 24	25½ „
April 20	24 „

During the two months he was in St. Bartholomew's he was tapped three times. Taking 23 pints for each of these, as that is the average of the previous thirty-one tappings, and adding the 6 pints withdrawn at Guy's, we get a total of 790

pints, which we see is all but 100 gallons. It will be noted that sometimes the fluid re-collected at the rate of over 2 pints a day.

On admission.—The patient is sallow, very thin, and exhausted. The pulse is feeble and the heart's impulse cannot be felt. Temp. 97·4°. There are a few moist râles in the chest. The tongue is red, the lips are covered with sordes, and the breath is foul; the bowels are open once every hour or two, the intestines are distended with gas, there is dulness in the flanks and a thrill can be obtained, the liver and spleen cannot be mapped out owing to the tympanites; there are a number of scars from former tappings. The urine contains albumen. There is nothing else noteworthy about him.

After he had been in the hospital two days, 6 pints of fluid were withdrawn from the abdomen. From the first there was great difficulty in getting him to take any food; the diarrhœa was but slightly controlled by astringents, and although attempts were made to nourish him by means of the nasal tube and enemas, he gradually sank and died.

I am sorry to say I was not able to be present at the complete autopsy. I, however, saw the liver, which presented the usual condition of perihepatitis, with the thick white covering, which easily peeled off. Dr. Perry, who made the examination, tells me that there was general lardaceous disease, that the kidneys were granular, and that there was old chronic peritonitis matting together the omentum into a thick mass.

I dissected the liver afterwards, with particular reference to the point as to whether the portal vein was dilated, and I found that it was not. Microscopical sections showed that there was much thickening of the tissue in the portal canals, a condition that is well known to be common in cases of perihepatitis, but no evidence whatever of pressure on the portal vein or bile-ducts could be observed.

The information about perihepatitis in the books is most scanty. The majority of the authors do not draw any distinction between a mere local thickening here and there, and the formation of a universal, white, tough jacket, which can be easily peeled off. Two ideas for the cause of the ascites are in vogue, one that the perihepatitis causes it by constricting the portal vein at its entrance to the liver, the other that it is caused by the general pressure of the capsule on the whole organ, but it seemed to me that the difficulty of accepting either of these explanations was that jaundice was never present, and secondly I doubted whether the second cause

was competent to cause the fluid to re-collect with the enormous rapidity that it did in the case related this evening, and had the first been the efficient cause I ought to have found some dilatation of the portal vein. Therefore, I could not help thinking that the perihepatitis was only part of some more general disease. I accordingly searched the Guy's Hospital records of autopsies to see if this were so.

I took forty cases quite indiscriminately. Eighteen of them were examples of partial, and twenty-two of complete, perihepatitis. Of the eighteen cases, six were examples of peritonitis due to either tubercle or cancer, and the thickening of the capsule of the liver appeared to be merely part of the general peritonitis, and therefore we need not consider them any more. The point to which I would very particularly direct attention is that out of the remaining twelve only one is stated to have peritonitis, and of the remaining eleven eight are distinctly stated not to have had peritonitis, and no mention of the peritoneum is made in the remaining three. Nine of the twelve had capsulitis of the spleen, thus bearing out Wilks' and Moxon's statement of the great frequency of the association. In ten out of the twelve there was lung or heart disease, and thus there was a strong probability of backward pressure; of the remaining two, one was a case of cirrhosis, and the other was a case of renal calculus.

Now let us examine the twenty-two cases of universal perihepatitis. In the first place in only two of them is it stated there was no peritonitis. In seventeen of them it is distinctly stated that there was peritonitis. In the remaining three no mention is made of the peritoneum. It would take too much time to detail the description of the peritonitis; it was always chronic, and was never due to tubercle or growth. I copy one description taken at random. "The peritoneum was converted into a thick tough layer, matting all the intestines together, and covering them with a thick fibrous apron. The omentum was all matted up into a thick lump 2 inches broad below the stomach."

There was capsulitis of the spleen in fourteen of the twenty-two cases, and in several it is not stated whether or not capsulitis was present, and in only two is it definitely stated that it was absent, and a point to which I would direct attention is that the splenic capsulitis was universal. The kidneys were granular in nineteen cases; in one they were lardaceous, and in only two were they stated to be healthy. In eight cases there was some lung or heart mischief that might have

caused backward pressure, and in some cases it certainly did so, for the liver was nutmeg. It is impossible from reading the reports to say in which of the cases the kidneys were the seat of the primary disease and the heart and lungs were affected secondarily, but in some this certainly was so, and from reading the reports I should say that we shall be about right if we set down four of the eight as examples of primary kidney disease. In four cases the patient had gout; in one it was doubtfully present, and in two others there was a strong family history of gout. In six cases there was a history of alcoholic excess, and it is particularly noteworthy that in none of these cases was there any marked cirrhosis, in fact in many cases it is distinctly stated that the liver is soft. In three cases syphilis was a very prominent feature in the history, and in one other it was doubtfully present.

The liver itself is usually described as having a thick white coating which easily peeled off, and often it had depressions on it here and there, and the anterior edge was generally folded and the tissue soft; sometimes it was nutmeg, but only in cases of backward pressure from the chest. It was never markedly cirrhotic. In two of the syphilitic cases lardaceous disease was present. There was never any mention of a dilatation of the portal vein.

With regard to symptoms, there were only two cases in which it seemed clear that there was no ascites, and these were the same two in which it seemed evident that there was no peritonitis. There is no possibility here of the wish being father to the thought, for I abstracted the pathological conditions separately from the clinical symptoms, and compared them together afterwards. This seems to me to lend strong support to the suggestion I made that the ascites was due to the peritonitis. The number of tappings varied from one to two up to eight or nine; there was nothing to approach the extraordinary number of thirty-five tappings such as were performed upon my patient. Except in one case of severe heart disease there was no jaundice present.

The conclusions that I would with all diffidence suggest are that :—Universal perihepatitis is in the great majority of cases part of a general disease consisting of a chronic peritonitis, universal capsulitis of spleen and liver. It is almost invariably associated with granular kidney, and frequently with gout, syphilis, over-indulgence in alcohol, and diseases of the heart and lungs causing backward pressure. That the cause of the ascites is the general chronic peritonitis, for it is

always present when there is ascites. On the other hand there is no peritoneal effusion in the rare cases of perihepatis without peritonitis, and that the cause of the ascites cannot be due to pressure on the portal vein or liver as a whole, for the vein is never dilated, nor is there any jaundice.

The cases of universal perihepatitis in which no peritonitis or ascites was present are so few that it would be rash to draw any conclusions as to their etiology, but from the one or two that I have come across I cannot help thinking that they will be found to be usually due to syphilis. In no case was there any evidence that the disease could remain latent, or that it tended to recover. It would therefore appear that the prognosis is bad.

The cases of partial perihepatitis appear to be distinct from those of universal perihepatitis. In the former the thickened patch will not peel off, the liver is not soft, there is no folding of the anterior edge, the capsulitis of the spleen is not usually universal, there is but rarely any peritonitis or ascites unless the local capsulitis of the liver is only part of a general peritonitis such as that set up by cancer or tubercle. Here it is worthy of remark that cancerous or tubercular peritonitis never sets up a universal perihepatitis; there is never any obvious local cause for the chronic peritonitis I have shown to be usually present in that malady.

I think it must be very rare for the cases of local perihepatitis to become general, because, for the reasons given above, they seem to be different processes. Granular kidney and general peritonitis would be more common in the local cases if they could become general, and at the autopsy the perihepatitis is usually equally severe over the whole liver.

The average age at death of cases of universal perihepatitis was 47½ years; the youngest was the case here recorded, and his age was 29; the eldest was aged 68. The proportion of males and females was as thirteen is to eight.

I would suggest that should it be found that I am right in my contention that general hepatitis is merely part of a much more general disease, it would be better to have a new name to apply to it.

With regard to the treatment of these cases of repeated collections of fluid in the peritoneal cavity we have at Guy's had permanent drainage in one or two cases, but it is not very satisfactory, for the lymph blocks the cannula. I cannot help thinking that if the peritoneal cavity were laid open and washed out we might get some success.

XLVI.—*Tumour of the Right Ovary in a Child aged Seven Years associated with Precocious Puberty: Ovariotomy: Cure.* By R. Clement Lucas, B.S. *Read April* 27, 1888.

M. D., æt. 7, was admitted into the Evelina Hospital under the care of Dr. Goodhart on December 27, 1884.

History taken on admission.—She is one of five children, the rest of whom are living and healthy. Her parents are also healthy. One aunt on the mother's side died of cancer of the breast.

A short time ago she was noticed to have a dark blood-stained vaginal discharge which lasted a few days and then ceased.

About two months before admission, the mother observed a hardness in the child's abdomen, which was only painful when touched. This swelling has increased in size, at first slowly, but during the last fortnight much more rapidly. It has also become more painful so that the child frequently cries.

She is a fair-complexioned child, somewhat pale and anæmic. Her tongue is slightly furred, temperature normal, and skin dry. Lungs and heart healthy. Pulse rapid. The mammæ and pubes show an advance of development most remarkable in so young a child. The mammæ are firm and about the size of oranges; whilst the mons veneris is of unusual elevation, and covered with hair about an inch in length.

The abdomen is very prominent, and there is a large hard tumour to be felt in it. The tumour extends from the right anterior superior spine of the ilium to within two fingers' breadth of the left, and from the pubes upwards to 1 inch above the umbilicus. Its mobility appears to be limited only by its size. Its surface is indistinctly lobulated, somewhat elastic, with a portion below the umbilicus of harder consistency than the rest. The left flank is resonant, but the right dull. There is resonance between the edge of the tumour and the liver and spleen. The abdomen, one inch below the umbilicus, measures 21½ inches in circumference.

January 7, 1885.—There is a dark vaginal discharge to-day, which reacts to the guaiacum and ozonic ether blood test.

January 11.—The discharge having lasted three days, has now ceased. It had all the appearance of an ordinary menstrual period.

January 25.—There is again a slight dark-coloured discharge from the vagina, less than on the former occasion.

January 26.—The discharge stopped to-day.

February 4.—The general condition of the child has improved since her admission, and Mr. Lucas to-day decided to operate. She was placed under the influence of ether, and an incision from the umbilicus to the pubes was made in the median line. The subperitoneal fat was found to be of exceptional thickness, and its vascularity caused some trouble, four vessels requiring torsion before the peritoneum could be opened. The peritoneum having been divided on a director the tumour came into view, but was found too large to be removed through the opening made. The tumour was punctured with a large-pointed cannula, but only blood escaped. On withdrawing the instrument it was found plugged with a semi-caseous material. The site of the puncture was ligatured, and the incision in the parietes was extended upwards to within 2 inches of the xiphoid cartilage. Two large adhesions to the small intestine, and two of even larger size connecting the tumour with the colon, were ligatured with catgut and divided. The tumour was now drawn out of the abdomen, and its broad pedicle secured with a double chromicised catgut ligature. The uterus and left ovary were examined and found healthy. The peritoneum was carefully sponged out, and the wound closed with thirteen silver sutures carried through the thickness of the abdominal wall and the peritoneum. Gauze dressings were applied. The child was sick once during the operation. She was ordered ½ oz. of brandy at once, and five minims of the tincture of opium every four hours.

The tumour removed was for the most part solid, weighing 1 lb. 1 oz., and irregularly oblong in shape. In the centre there was a small cyst, about the size of a walnut, containing clear fluid but no intracystic growth. On the anterior part near the surface was a yellow caseous mass the size of a hen's egg. On section it was soft and gelatinous, and yielded a good deal of soft material on scraping. Dr. Goodhart, who examined the tumour microscopically, reported as follows:—

"The ovary is composed of a thick felted network of hyaline, fibroid or connective tissue, crowded with round nuclei which seem rather to be part of it than enclosed by it; but there are also numerous alveoli containing sometimes one, sometimes two or three granular cells, each with a single large nucleus. Round-celled sarcoma seems to be the best name for it; but it is more fibrous than most such, and the alveolar structure creates another difficulty. Altogether I gain a favourable impression of non-malignancy from its examination."

February 5.—She has had frequent sickness since the operation. Her temperature in the morning was 99·2°, and in the evening 101·3°. Pulse rapid. In the evening she had a nutrient enema.

February 6.—The vomiting continued during the night, so the nutrient enema was repeated, but during the day she has been able to keep down some milk and lime-water. All next day the temperature rose to 101·1°, but fell to 99·4° at 6 P.M. Bowels open once. The wound was dressed and looked healthy. There was to-day a return of the menstrual fluid.

February 7.—The vomiting has ceased. Temperature normal. She has taken half a pint of milk and beef-tea, and has slept better.

February 8.—Morning temp. 101°. Evening temp. 102·3°. She is taking milk and a little beef-tea. Wound dressed and healthy. No abdominal pain.

February 9.—Slept well. Bowels acted again. Morning temp. 100·3°. Evening temp. 100°.

February 10.—Morning temp. 99°. Evening temp. 99·2°. Five sutures were removed. At the lower part of the wound there is a little irritation and suppuration.

February 14.—All the sutures were removed to-day. The edges of the wound show signs of irritation, and there is a little pus.

February 16.—There was a sudden rise of temperature to 103·2°, with pain in the abdomen. On dressing it was found that the wound had given way at one spot. Drainage was ensured, and the abdomen supported with waterproof strapping. Tinct. Opii ♏v 4tis horis.

February 17.—Temperature down to 97°. Bowels open, with loose motion. Tongue clean. General appearance improved.

February 21.—The wound at the lower part is filled up with granulations, which bleed readily if injured.

February 29.—Child improving and able to take fish diet. Temperature normal.

March 2.—Wound healed, except at the lower part. Meat diet ordered.

March 21.—She was allowed to sit up. The gauze dressing was left off. She is gaining flesh.

April 2.—She left the hospital quite well, though still rather weak.

On November 8, 1887, she was found to be in perfect health.

Remarks.—The association of a solid ovarian tumour with precocious puberty in this child is the chief point of interest in her case. The forced development of the sexual organs caused the child to present a very peculiar appearance, for the contrast of the height and figure with the enlargement of the mammæ gave to the bust a resemblance of a dwarfed woman. The external genital organs had undergone a corresponding development, and there was a considerable growth of hair on the pubes. These changes were associated with a periodic discharge of menstrual fluid, so that all the signs of puberty were present.

It was thought by some who examined the case that the tumour might prove to be of a dermoid nature, but no signs of perverted fœtal growth were discovered in it. We must therefore conclude that the mere irritation of growth in the ovary caused such excitement of the nervous centres presiding over the generative function as to excite development changes far in advance of the child's age. With the removal of the growth these signs for the most part reverted to their normal state. Once only, on the second day after the operation, a return of menstrual discharge occurred, and before she left the hospital the prominence of the mammæ had much subsided. It is satisfactory to be able to report that two years and nine months after the operation there was no return of the growth, and the child was in perfect health.

XLVII.—*Rupture of the Bladder: Laparotomy with Suture: Death.* By Charters J. Symonds, M.S. *Read May* 11, 1888.

Frances H—, æt. 7, was admitted into Guy's Hospital on April 8, 1887, in a state of extreme collapse. She had been thrown from Blackfriars Bridge by her lunatic mother, and fell a distance of some 40 feet into a passing barge. When picked up by the bargeman she was lying on her abdomen, and was sensible. When admitted she was so cold, blue, and pulseless, that it seemed impossible that she could survive. She had pain in her abdomen and tenderness over the hypogastric region, where there was a rounded fulness resembling a distended bladder, and over this area reaching half way to the umbilicus there was dulness also. No fracture of the pelvis was found. It was not thought necessary to pass a catheter at once, but fomentations were applied, and after four hours a catheter was passed, removing first a few drops of clear urine, and then a drachm of dark blood. I was called again, and on examining the bladder removed a small quantity of dark bloody fluid only, and was unable to pass the catheter through a rent into the peritoneal swelling. The child being under chloroform for the above examination the abdomen was opened at once. On dividing the peritoneum a large quantity of dark fluid immediately escaped. This had a faint urinous odour. The finger introduced ascertained that the pelvis was filled with this fluid. A metal staff was now passed through the urethra, and could be felt through a layer of peritoneum, and after a little manipulation the end passed into the peritoneal cavity, demonstrating the existence of a laceration. On raising the bladder the rent was found to be about 1¼ inches long, and to involve the apex of the viscus. Quite two thirds were under the peritoneum at its reflection from the summit of the bladder; the other one third involved the peritoneum, and through this the urine had escaped into the abdominal cavity. Besides this rent another passed to the left from its centre, making a stellar laceration. The peritoneum was a good deal lacerated,

and had been torn from the bladder. The aperture readily admitted the forefinger. A sponge was placed behind the bladder to protect the intestine, and the spray, which up to this time had been used, was stopped. The abdominal incision was so small that when the bladder was drawn forward by forceps the opening was nearly closed. The wound in the bladder was closed by fine silk sutures inserted so as to turn in the mucous membrane after Lembert's manner. Sutures were passed well beyond each extremity of the rent. Then the peritoneum passing from the bladder to the abdominal wall was sutured in the same manner. Altogether about twenty sutures were used. The pelvis was washed out with sponges wrung out of a solution of perchloride of mercury. No fluid was found in the loins, but these parts were also dried. Three deep silk sutures closed the abdominal incision, and a catheter was tied in. The child was kept under ether, except at the beginning, and her pulse continued good throughout, and when the operation, which had lasted two hours, was completed she was in a fairly satisfactory condition.

April 9.—5 A.M. Pulse was 108. Ordered ½ drachm of brandy every hour with 2 drachms of milk. Ordered 3 minims of Tr. Op. 4tis horis. 7.45 A.M. Pulse fluttering. Some brandy was given. 9 A.M. Finding the urine was not flowing the No. 8 was replaced by a No. 10, but only a few drops of urine were withdrawn. The child was warm, and was under opium. Pulse very quick; tongue dry; a little abdominal distension above the bandages. 10 P.M. During the day she had taken 2 oz. of milk and 1 oz. of brandy. Only a few drops of urine had passed. About 8 P.M. she was very low, pulse feeble, and the skin cold, but in half an hour a remarkable change occurred; she revived, and improved in every way.

April 10.—At 5 A.M. she vomited nearly half a pint of curdled milk. 10 A.M. Very little urine escaped in the night, but the child has a good colour and has quite recovered from the shock. 5 P.M. A soft rubber catheter was substituted. A good deal of urine had come away during the day, saturating the blanket. When the new catheter was inserted about 1 drachm escaped. Since 10 A.M. all opium has been omitted. Her tongue is more moist, and she is better. 10 P.M. The child is restless, and was noticed to strain as if wishing to micturate. When the catheter was changed a little blood was noticed in the labia. This came apparently from the meatus, for the urine escaping at the same time was

clear. She was sick at 11 A.M., and again a short time ago. Pulse 140, resp. 24, temp. 99·4°. 10.30 P.M. The child was again sick. Given 2 minims of Tr. Op. 4tis horis.

April 11.—Child sick once in night. A good deal of urine had passed into the bed and but little by catheter. No abdominal distension. Pulse fair. Still very thirsty indeed, ordered ½ drachm of brandy every hour with milk and lime-water.

April 12.—The child remained low and restless. By 4 P.M. she had been twenty-eight hours free from vomiting. Towards evening vomiting again returned, and she was fed by enemata. There was no abdominal distension or tenderness, and the bladder acted well, the catheter having been removed on the evening of the 11th.

April 13.—Fearing an accumulation of inflammatory products and pus in the pelvis at 9.30 P.M. the upper sutures were removed, and the finger inserted, but though a catheter was passed down into the bottom of the pelvis and a stream of boracic lotion sent through it no pus or unhealthy fluid was withdrawn. As much care as possible was employed to prevent the detachment of the intestine from the bladder to which it was adherent, but, as will be seen later, this accident did occur. The wound was again closed.

April 14.—Urine escaped freely through the lower suture openings. The lower sutures were removed, and the wound opened to allow free drainage. The child was very emaciated by this time, and very restless, though apparently in no great pain. The abdomen remained almost free from distension, and the intestine seen at the exploration looked healthy.

April 15.—She died at 9 A.M., just six days and eighteen hours from the time of the accident.

At the autopsy, on opening the abdomen, a loop of small intestine was found, partly adherent to the top of the bladder and lower part of the wound, covered with yellow lymph. The edges of the wound were grey and suppurating, and from the lower angle a channel passed irregularly into the bladder. There was a collection of pus in the left iliac fossa by the side of the sigmoid, extending nearly to the kidney and communicating with the rent in the bladder. The right side showed no peritonitis, nor was there any fluid in the pelvic cavity, so that the peritonitis was local and must have been due to the escape of urine in one particular direction. There was a pouch by the side and in front of the bladder, containing pus

and urine. This was bounded by that part of the peritoneum passing from the bladder to the abdominal wall, and which was described as being torn by the accident.

The extra-peritoneal part of the rupture in the bladder was gaping, the sutures having cut through, and the edges were ragged and grey and suppurating. The peritoneal portion had united soundly. The rent, seen from the inside, measured about 4½ inches in length. The mucous membrane was inflamed.

There was a separation of the right sacro-iliac articulation (the cartilage being in connection with the sacrum) but no injury to the rest of the bony pelvis.

The success that has attended the operation of suture of the bladder for intra-peritoneal rupture has been so satisfactory that the details of a case indicating an important modification in the method are likely to be of service. This case has been referred to by Sir W. Mac Cormac, and is included in the table published by him in his address at the Medical Society; but as I was myself away when the particulars were communicated, I am the more anxious to give the details.

The injury in this case was extremely severe, and gave rise in itself to so much collapse as to mask localised symptoms. The injury was first suggested by the prominence of the hypogastric region. Here there was a fulness like that accompanying distension of the bladder, and I at first thought that this was the case, and ordered, in consequence, warm fomentations, and if no urine was passed in four hours, a catheter was to be introduced. When this was done, a few drops of clear urine escaped, followed by a discharge of dark blood, and when later I again passed a catheter a small quantity of dark fluid was removed. No alteration took place in the abdominal swelling, nor could I succeed in passing the catheter through the rent in the bladder.*

The next point of importance is the situation of the rent and the way in which this should modify the treatment. The rupture involved for one third of its length the peritoneal cavity, and for two thirds the non-peritoneal surface, and besides this, the anterior false ligament was stripped partly off the bladder and abdominal wall, and was extensively torn. The edges of the wound were very irregular. In dealing with the rent, Lembert's sutures were employed throughout for the bladder, and the torn peritoneal fold was also brought

* Once the child was observed to strain with desire to micturate.

together. In all some twenty sutures of fine silk were used, and the external wound was closed completely, while a catheter was tied into the bladder. The post-mortem showed that the vesical peritoneum had united soundly, while the rest of the wound had reopened, and that here the edges were soft and grey, while an accumulation of pus had taken place in the left iliac fossa, and by the side of the bladder, and that this was in communication with the rent. The best plan would have been to have closed the peritoneal portion of the rent in the bladder, and that in the false ligament, and to have left the non-peritoneal portion open, passing a drainage-tube through it into the bladder, or, as has been done successfully, to suture the margins of the rent to the skin.* The catheter caused the child a good deal of pain, otherwise its continued retention would have perhaps also been better. I opened the abdomen on the sixth day to ascertain the existence or otherwise of an accumulation in the pelvis of inflammatory products. As urine passed in abundance by the urethra I did not think that any had escaped into the peritoneal cavity. The pelvis was found quite free, nor was there evidence of general peritonitis. The intestine was adherent to the bladder, and great care was necessary to avoid detaching it, as it was thought its adhesion might assist in closing the aperture in the bladder. The collection of pus on the left side was unfortunately not reached.

Another point of importance in the case (and one to which Mr. Rivington draws special attention) was the presence of the rounded swelling resembling a distended bladder. This was most marked, and when the abdomen was opened the intestine was found lying above the fluid, which occupied and filled the pelvis, but did not extend into the lumbar regions. Afterwards, also in sponging the lumbar regions, no fluid was removed, nor were the sponges even soiled, a circumstance showing that the fluid had not distributed itself over the peritoneal cavity.

The success recently attending suture of the bladder after supra-pubic lithotomy must not, I think, lead one to expect the same result after rupture. The one is an incised wound, the other one with ragged and bruised edges, and it is to this condition that I attribute the failure in the present instance. It would have been better treatment to have been content with the closure of the peritoneal portion of the rent, and to have left the extra-peritoneal portion open. This would seem on

* *Vide* Case 6 in Mac Cormac's list.

the whole a better plan than paring the edges of the rent, and then suturing, and then, to check as far as possible the escape of urine through the wound, it would seem in these cases wiser to retain a catheter.

XLVIII.—*The Local Application of Cocain in Acute Parenchymatous Tonsillitis. With Cases.* By F. de Havilland Hall, M.D. *Read May* 11, 1888.

In a leading article in the *Lancet* of November 12, 1887, attention is drawn to the fact that in the last volume of the *Transactions* of this Society "there is but one paper of a conspicuously therapeutical kind, and that is the work of a surgeon." The writer of the article goes on to say that there is evidence on all sides of life and activity in therapeutics, and that this Society was started to be above all things therapeutical, but that in this particular direction it has hardly justified its existence. What I have quoted must be my apology for bringing before the Society a small contribution to the action of drugs. Had it not been for the article just referred to I had intended to have sent my notes to one of the journals, but it seemed to me to be the duty of every member who values the reputation of a society like the Clinical, which has done such good work in the past, to do his best, in however humble a way, to remove any reproach which may be urged against it.

I desire to bring before your notice to-night three cases of acute parenchymatous tonsillitis or quinsy treated by the local application of cocain.

Case 1.—E. S., æt. 28, a labourer, was admitted into the Westminster Hospital under my care on September 28, 1887. I had admitted him for a similar attack on two previous occasions during the last five years. The first time he was in the hospital for four weeks and the second time three weeks, and was treated with steam to the fauces, poultices externally, incisions into the tonsils, and tincture of the perchloride of iron internally, and on each occasion suppuration occurred after the usual period of misery so well known to those who have suffered from quinsy. At the date of his third admission he told me that he had been ill for four days. The right tonsil and adjacent soft palate were enormously swollen, and he was unable to swallow without the greatest difficulty and pain. At first he was ordered poultices and the throat to be steamed, but on the 30th his discomfort was so great and the inability to swallow so complete, that I determined to try

the effect of cocain. Accordingly I painted a 20 per cent. solution freely over the whole of the fauces, with the result that the patient felt immediate relief and was able, in the course of a few minutes, to swallow some bread and milk. The same night the left tonsil became affected, and the application of the cocain was renewed on the evening of October 1 with an equally good effect. Next day the patient was able to swallow bread and butter. No suppuration occurred. As soon as he could swallow comfortably he was ordered a mixture containing the tincture of the perchloride of iron and left the hospital quite well after having been in one week instead of four and three weeks respectively as on the two former occasions.

Case 2.—W. N., æt. 25, a publican, seen in consultation with Mr. Wright at Kennington, on October 26, 1887. The history I obtained was that he was taken ill on the 21st and that he had rapidly got worse the last twenty-four hours. His complexion was dusky, he was suffering from some dyspnœa and great dysphagia, and had hardly been able to swallow all day. Both tonsils and the soft palate were greatly swollen and were covered with a viscid secretion, but there was no false membrane. Just before I saw the patient Mr. Wright had punctured the right tonsil and a little blood had escaped, giving the patient slight relief. Pulse 120, feeble. Skin sweating. Urine, sp. gr. 1030, loaded with albumen. When I completed my examination and retired to consult with Mr. Wright I must say that I felt very anxious about the patient's condition, and this was not lessened by Mr Wright's saying that he had lost two patients in much the same state. Fortified, however, by my recent experience in Case 1, and having fortunately my cocain solution with me, I immediately proceeded to swab out the throat, using the 20 per cent. solution. In doing so I thoroughly cleansed the mucous membrane of the throat from the secretion with which it was covered, and ten minutes after the first application I made a second, using in all about a drachm of the solution. Five minutes later the patient was breathing more easily and was able to swallow half a pint of egg, milk, and brandy. Some hot bread and milk was then prepared for the patient and I left him swallowing it, and in a much more hopeful condition than half an hour previously. Tincture of the perchloride of iron and three grains of quinine were ordered to be taken every four hours, with poultices externally and inhalations of steam.

As regards the further progress of the case Mr. Wright informs me that he made a second application of cocain the same night, two the next day, two the third day, and one on the fourth, in all, therefore, including the one I made, six. The patient gradually improved, no suppuration occurred, and a week after I saw him the urine was free from albumen and the patient well.

Case 3.—M. M., æt. 39, a porter, attended at the Throat Department, Westminster Hospital, on November 16, 1887, complaining of sore-throat and inability to swallow, which symptoms had existed for thirty-six hours. He was quite well previously. The left tonsil and adjacent parts were swollen, and there was a yellow patch on the tonsil. Pulse 88, fair volume; temperature 102·2°. Urine contained a trace of albumen.

I applied a 20 per cent. solution of cocain and had the satisfaction of seeing the patient soon after swallow half a pint of bread and milk. The patch on the tonsil was easily removed by the brush. Tincture of the perchloride of iron and chlorate of potassium were ordered to be taken three times a day.

The next day (November 17), pulse 76, temperature 99·4°, the patient could swallow bread and milk; he was somewhat hoarse. Right tonsil slightly inflamed, some swelling of the arytenoids.

November 21.—No difficulty in swallowing; throat well except a small patch on left tonsil. Urine free from albumen.

The three cases I have brought before the Society will, I think, be sufficient to draw attention to the employment of cocain locally in what is always a most uncomfortable and painful disorder, though in my experience it has never been a fatal one; cases which apparently threaten life terminating in the manner so graphically described in Hook's account of the Lady Rohesia.

There can be no doubt that the twofold action of cocain is of advantage in quinsy, *i. e.* the sedative action it has on the sensory nerve of the part, and the power it possesses of causing contraction of the arterioles and cutting off the blood-supply. This latter action is seen to its fullest advantage when cocain is applied to the mucous membrane of the nose, as after waiting for three or four minutes the size of the nasal passage is found to be greatly increased. Hence cocain

facilitates deglutition both by diminishing the pain experienced by the passage of food and in the muscular movements by which the act of swallowing is produced and by diminishing the mechanical obstacle to swallowing due to the swollen condition of the tissues of the fauces.

As regards the method of application of the drug, the best plan is to cleanse the surface of the mucous membrane by spraying over it a solution of bicarbonate of sodium ten grains to the ounce. By so doing the cocain comes more immediately into contact with the mucous membrane, consequently less of the drug will be required; and this is desirable for two reasons: in the first place cocain has been credited with some deaths, and it is therefore prudent to use as little of the drug as possible; and secondly, though cocain is wonderfully reduced in price, it is still sufficiently expensive to make the amount used of some importance. The alkaline solution has, I believe, another advantage, namely, that cocain acts more efficaciously in the presence of an alkali; moreover, bicarbonate of sodium is itself a good application in cases of quinsy. In looking back at the cases I have brought before the Society to-night I have been much struck by the fact that, so far as I have been able to discover, no suppuration occurred in any of the three. When next I have occasion to employ cocain in a similar case I will not make use of poultices and steam inhalations, remedies calculated to favour suppuration, as it seems to me that they might neutralize the effect of cocain in preventing suppuration, if such action it be found to have.

XLIX.—*A Case of Complete Bilateral Paralysis of the Vocal Cords, the result of Acute Laryngitis.* By Percy Kidd, M.D. *Read May* 11, 1888.

Annie M., æt. 37, came under my care as an out-patient complaining of shortness of breath and loss of voice. She stated that for two or three years she had suffered from more or less continued cough and expectoration, and had lost flesh. Quite recently shortness of breath had developed and a few days ago she completely lost her voice.

The patient was a thin, pale woman. Respiration was laboured and there was marked inspiratory dyspnœa.

Physical examination of the chest revealed slight impairment of resonance at the apex of the right lung and harsh breathing of laryngeal character over the upper parts of both lungs.

The mucous membrane of the larynx presented a uniform bright-red appearance. The aryepiglottic folds and ventricular bands were much swollen, and there was a slighter degree of tumefaction of the interarytenoid fold. On the surface of the latter fold there was a small yellowish mass of the size of a very small pea which was not detached by coughing.

The vocal cords had completely lost all movement, and occupied a position midway between that of phonation and inspiration. The cords were congested, but not otherwise altered in appearance.

It was specially noted at the time that the swelling of the parts around seemed insufficient to account for the paralysis by mere mechanical interference.

Nothing abnormal was seen in the pharynx.

The patient was ordered cold applications to the throat, ice to suck, and complete rest.

Four days later a great improvement was noticed. The dyspnœa had greatly diminished, and she expressed herself as feeling much relieved.

There was still some slight swelling of the ventricular bands and aryepiglottic folds, and general congestion. The interarytenoid fold now appeared quite normal, and there was now no trace of the small yellowish mass (probably inspissated

secretion) seen on the first occasion. The vocal cords had recovered their power of movement to a considerable extent.

On phonation the normal closure of the glottis ensued, but abduction was still deficient though not completely lost as at first.

Steam inhalations and quinine internally were now ordered, and rapid improvement took place. The laryngeal swelling entirely disappeared and in three weeks the movements of the vocal cords were found to be perfect in both directions.

A week later the patient ceased to attend, and I did not see her again.

The interest of the case centres in the abolition of movement of the vocal cords. Paresis of individual muscles of the larynx is not infrequent in catarrhal laryngitis, but as far as I am aware, complete paralysis of all the muscles that close and open the glottis has not been observed in this affection. The immobility of the vocal cords is, I believe, to be attributed to paralysis, and not to mere mechanical interference, for the following reasons.

In the first place the loss of motion was absolute and symmetrical on the two sides. Secondly, recovery was comparatively rapid, and the adductors regained their full action before the abductors.

Complete mechanical fixation of both vocal cords is not a common occurrence, and it is remarkable that each cord should have taken up the same (cadaveric) position.

It is still more difficult to see why the closing action of the cords should have been restored before the antagonistic movement of abduction, if the abolition of function were due to mechanical causes. This seems a fatal objection to the idea that the muscular derangement was the result of effusion into or around the cricoarytenoid joints.

The swelling of the interarytenoid fold was certainly not sufficient to account for the immobility of the cords. It is true that in cases where there is great swelling of this fold, as in tuberculous and syphilitic ulceration of this region it is not uncommon to find imperfect closure of the glottis owing to protrusion of the infiltrated fold between the posterior parts of the vocal cords. But in such cases phonation is attended by some degree of movement of the cords towards the median line, at least in their anterior portions.

No trace of motion occurred in the present case.

A similar objection applies to a mechanical explanation of the complex bilateral loss of action of the cricoarytenoidei

postici. These muscles, lying behind the cricoid and arytenoid cartilages, are less exposed to direct pressure from intralaryngeal causes than the adductors. Yet the less protected muscles were the first to recover.

It may be suggested that the small yellow mass seen on the interarytenoid fold was an abscess. This seems improbable from the fact that four days later there was no swelling of this fold and no trace of ulceration or irregularity, such as might have been expected after the rupture of an abscess.

Even if an abscess had existed it would hardly explain the succession of events. In the case of an abscess in this locality, the chief mechanical stress must have fallen on the interarytenoideus, and this should have been the last muscle to recover, whereas the interarytenoideus appears to have regained its function simultaneously with the other adductors. In any case the action of this muscle had been restored at a time when the abductors had only imperfectly regained their function.

In Dr. Semon's well-known paper, "On Paralysis of Individual Fibres of the Recurrent Laryngeal Nerve," 'Berl. klin. Wochenschrift,' 1883, an observation of Elsberg's is quoted which has some connection with the present subject. In a case of bilateral paralysis of the recurrent nerves, apparently of central origin, the adductors of the vocal cords recovered so much more rapidly than the abductors that paralysis of the latter muscles became the chief element of the case, causing so much dyspnœa that tracheotomy had to be performed. Subsequently the movements of the cords were almost entirely restored, but a relapse ensued in which complete paralysis was succeeded by a less perfect return of function of the individual muscles in the same order as before.

The fact that the adductors recovered before the abductors in Elsberg's patient, as in the present case, seems to corroborate in an indirect manner the truth of Dr. Semon's generalisation, that the dilator muscles of the glottis are more prone to paralysis than their antagonists the constrictors, whether the paralysis be due to central or peripheral disease of their nervous supply.

From some experiments of Dr. Semon and Mr. Horsley, it seems that this vulnerability is not confined to the nervous structures alone, but is manifested also by the muscular tissues of the abductors. For in the freshly excised larynx of animals it was found that the cricoarytenoidei

postici lost their direct electrical irritability at a much earlier period after death than the adductors.

It follows almost as a corollary from these observations that the more resistant muscles, the adductors, should recover from paralysis sooner than their weaker antagonists.

In the present instance it is suggested that paralysis was due to a serous infiltration of the various muscles and their terminal nerves, consequent upon a severe laryngitis, in a weakly woman the subject of chronic bronchitis.

L.—*Case of Necrosis of the Great Cornu of the Hyoid Bone and other portions of Bone or of Ossified Cartilage: Abscess in the Anterior Triangle of the Neck: Extrusion of the Sequestra: Pharyngeal Fistula: Antecedent Profuse Hæmorrhage from the Throat: Pneumonia: Death from Phthisis.* By T. W. Nunn. *Read May* 11, 1888.

THE patient was a gentleman, æt. 32, who had been in the army, and had served a short time in India. When twenty-three years of age he had suffered from rheumatic fever, and he thought that he had never since felt thoroughly well. He applied to me on account of a very sore tongue, the condition of which was evidently caused by constitutional syphilis. The primary disease, contracted about three years previously, was followed in three months by secondary eruption, &c. I have no reliable history of these sequelæ. The patient was 6 feet 1 inch in height, and weighed 12 st. 6 lbs. The date of my first interview was February 28, 1876. During the following months up to August he was seen occasionally by me, when Mr. Henry Morris kindly took charge of him on my leaving town. I again saw the patient on September 25, after my return. In consequence of his irregular habits no treatment had been more than partially carried out; but he came to me from time to time until April 23, 1877, when he reported that, on the day before, he had "coughed up" some blood. I found his temperature 99·7°, pulse 100, and there was swelling with tenderness about the thyroid and cricoid cartilages on the right side. Four days later, I was, in the forenoon, summoned to where he was residing, a most profuse and sudden hæmorrhage from the throat having taken place. I found that Dr. Evans, then of Hobart Place, had quickly reached the patient, and had applied ice to the neck. Sir James Paget saw the patient with us in the afternoon, when the question of putting a ligature on the carotid was discussed, but it was decided not to do this operation, as the source of the hæmorrhage was uncertain, and the bleeding had ceased. I placed Mr. Edward Semple, who was good enough to put himself at my disposal,

in resident charge, and Dr. Evans continued his attendance. The following day the temperature was 103°, and there were symptoms of pneumonia. In the evening of this day, and at 3 A.M. the next morning, severe losses of blood occurred, which were, however, checked by ice, and the internal administration of gallic acid and opium. The patient was not allowed to speak or move, and he was diligently fed with small quantities of beef-tea. No further bleeding came on; but a few days later a swelling made its appearance in the lower part of the anterior triangle of the neck. This suppurated, and was opened; through the opening there were presently extruded a piece of the hyoid bone and some other fragments; after a while it was obvious that a pharyngeal fistula existed, as milk and other liquid food escaped through the opening during the act of deglutition.

A patch of solidified lung to the right of, and above, the right nipple was discovered about a week from the date of the last hæmorrhage. During the downward progress of the case there was abundant expectoration, which was at first excessively fœtid. The voice was hoarse but at the will of the patient, loud. The temperature varied from 99° in the morning to 100°—103° in the evening. There was no diarrhœa. In spite of the utmost care a bedsore formed over the sacrum.

Dr. Douglas Powell examined the patient, and confirmed the diagnosis of tubercular disease of the lung. Death took place, July 9, thus between ten and eleven weeks after the hæmorrhage.

No laryngoscopic examination was attempted. No post-mortem was made.

On referring to the *Transactions of the Pathological Society* I find only two cases of necrosis of the hyoid bone,—one by Mr. Bryant (1860) the patient being a young woman, æt. 22, without a syphilitic history; death was quickly caused by pneumonia; the other case by the late Dr. Murchison (1864), also that of a female without a syphilitic history; there was swelling and tenderness over the larynx. The necrosed and detached portions of the hyoid bone were got rid of by coughing. The patient recovered.

LI.—*Two Cases of Intussusception, with special regard to symptoms.* By R. W. Parker. *Read May* 24, 1888.

HENRY S., æt. 3 months, a healthy well-nourished child, with a good family history, came under observation with the following history and symptoms:

On a Sunday evening (April 10), three days before I saw it, the child suddenly began to scream as if in pain; this screaming continued more or less all night and kept the child awake. In reply to a question, the mother stated that there had been no antecedent diarrhœa, or constipation, that the motions had been in all respects normal, and that the last one was passed about midday on the Sunday in question.

On the following day (Monday, April 11), the child was sick several times, the vomited matter at first being thick and yellowish, and subsequently more watery. He seemed to be in less pain; the bowels did not act but the napkins were slightly soiled with blood-stained mucus. The mother stated that the child slept well during the Monday night and had only been slightly sick. She noticed, on the Tuesday (April 12), that the belly was swelled; the child looked a little pale and pasty, and there was some "rattling" in the chest. He had taken the breast well all the time.

State shortly after admission (Wednesday, April 13).—I found the child sleeping quietly in its cot. The face was free from anxiety, the eyes not sunken, the temperature was normal, and the skin moist. The Sister of the ward reported that the child had taken some milk, that it had not vomited, that it seemed to be free from all pain and discomfort, that there was and had been no straining, and that nothing had passed *per anum*. On examination, the abdomen was found to be tense, firm to the touch, uniformly distended and tympanitic; liver dulness was not appreciable, neither could a tumour be made out. This manipulation of the abdomen did not appear to cause pain. Examination *per rectum*, which the child in no way resented or strained against, revealed nothing characteristic; but on withdrawing the finger a little slightly blood-stained mucus was discharged.

A diagnosis of intussusception was confidently arrived at, and it was decided to try and reduce it by means of a copious

enema. Chloroform was accordingly administered; then a quantity of soap and water containing a little oil was injected by means of an ordinary Higginson's syringe. Very little could be injected; the greater part passed out by the side of the tube. As the child became rather blue in the face, the injection was desisted from for a while. No change was produced in the condition of the abdomen. The child was next inverted, and gentle massage practised, but without any result. Subsequently another effort was made. A somewhat longer tube was passed, and through this about a pint of fluid was slowly and carefully injected. Suddenly the abdomen became more tense, and it was evident that perforation of the bowel had occurred. The breathing became laboured and slowed, and the heart's action almost imperceptible. I did what was practically a post-mortem laparotomy but without avail. The child died within an hour.

The autopsy confirmed the suspicion that the gut had given way, a small rent being found at a point corresponding with the lowest part of the intussusception. A small quantity of the enema fluid had escaped into the peritoneal cavity. The intussusception reached to within about 9 inches of the anus; it consisted of the last portion of the small intestine, the ascending and transverse colon. The tumour measured 4½ inches in length; it was quite gangrenous and irreducible both before and after removal from the body. The containing gut (intussuscipiens) for some distance above and below the tumour was soft, and easily tore even when very slight traction was exercised upon it. In view of the gangrenous condition of the gut I am now inclined to think that the distension of the abdomen, very marked on the child's admission, was due to extravasation of gas.

Case 2.—Robert S., æt. 4 months, was brought to the East London Hospital for Children on a Thursday evening (December 1). The mother stated that he had not suffered from any previous illness; he was a breast-fed but not a very flourishing child. On the previous Monday evening (November 28), she noticed blood and slime on the napkins but did not think much of it as the child had had slight diarrhœa for a week past. Since then the child had cried more than usual, and had vomited after taking the breast. It was seen by a doctor and some treatment prescribed. As the child did not improve, the mother consulted another doctor, by whose advice it was brought to the hospital; the symptoms

had rapidly become very serious. On the Thursday, just before admission, the vomiting recommenced, and, as the mother expressed it, "the vomit smelt badly." The bowels had not acted since Monday.

When admitted on the Thursday evening (December 1) the child was obviously very ill indeed. Its breathing was hurried, thoracic, and superficial. The heart's action was very feeble, and the pulse could hardly be counted; the tongue was coated and foul; the eyes sunken; the face distressed. The abdomen was distended and tympanitic; the child did not resent manipulation, but moaned occasionally. There was no visible peristaltic movement. On deep palpation an elongated swelling was felt in the position of the descending colon. Nothing could be felt in the rectum, but on withdrawing the finger a little blood-stained mucus was discharged. The child was put to bed, surrounded with hot bottles, and other palliative measures were adopted. I only arrived at the hospital in time to see the child die, about two hours after its admission. It was clear, however, from the resident medical officer's (Mr. J. Scott Battams) account that the child was too ill when admitted to have justified any kind of surgical treatment.

In making the post-mortem examination I proceeded exactly as if I were about to do abdominal section. After opening the abdomen below the umbilicus I introduced my finger, and quickly found the tumour. Failing to make any impression on it while *in situ* I brought it out, and tried reduction as the gut lay on the surface of the abdomen. I was quite unsuccessful; neither by traction nor by compression, alone or combined, could I make other impression on the tumour than to cause several small rents in the peritoneal coat. The last three inches of the ileum were prolapsed through the ileo-cæcal valve into the ascending colon, the latter and the transverse portion being included in the intussusceptum. The gut was very œdematous, and the strangulated portion far advanced in gangrene.

Remarks on the Cases.

I wish more particularly to draw attention to the symptoms present, or more correctly speaking absent, in these two cases of acute strangulation, the one dying on the fourth, and the other on the third day after the suspected onset of the trouble, and in both of which the bowel proved to be extensively gan-

grenous. I may briefly point out that in the first case there were never any very acute symptoms. The vomiting occurred chiefly during the first twelve hours, and only after taking the breast. The pain lasted through the night, then passed off, and did not appear to recur. There was an entire absence of the facial expression so common in other forms of abdominal strangulation. The distension of the abdomen in the first case masked what would otherwise have been conclusive evidence of an intussusception, viz. the tumour in the region of the descending colon. In the second case there was a three days' history of an illness which had commenced almost imperceptibly after a slight attack of diarrhœa. Under the circumstances it is not very surprising that the real import of the symptoms—slight pain, a little blood-stained mucus from the rectum, and subsequent constipation—should have been overlooked or misinterpreted by the medical man first consulted. In both cases the amount of blood and of blood-stained mucus from the rectum was insignificant in amount. The cases appear to show that there is yet something to learn concerning the onset and indications of acute intussusception.

It is quite certain that nothing would have been gained by abdominal section in these cases after their admission to the hospital. In one of them injections were used, and rupture of the intestine resulted, but the condition of the bowel which allowed of this rupture would have contra-indicated either traction or pressure had abdominal section been practised. Even if reduction had proved possible it is very questionable whether anything would have been gained, as it would have been bad surgery to leave a piece of gangrenous gut loose in the peritoneal cavity. Nor would enterectomy have given the patient any better chance of recovery, for some inches of the small intestine, the cæcum, and at least two thirds of the colon would have had to be removed in each case in order to give enterectomy a chance of success.

If abdominal section should ever come to be considered a legitimate means for determining the exact nature of an uncertain abdominal lesion in young children, surgeons will shortly be in a position to speak on these questions with greater precision than at present. But if abdominal section is to be successful in cases of acute strangulation it must be undertaken very soon after the onset of the disease, before œdema or inflammation of the strangulated gut has set in. On the other hand, it is exceedingly probable

that carefully administered and copious injections may at this stage be practised with hope of success in cases in which the strangulation is not excessive. If they fail abdominal section should then be practised, and finally, if reduction of the intussuscepted gut be found impracticable, as a last resource Nélaton's operation of enterotomy may be carried out. I have seen many intussusceptions at the East London Hospital for Children, some with, some without, appreciable tumour, in which copious injections alone or combined with manipulation have been successfully practised. So far as I remember the two cases just related are the only fatal ones I have met with during many years' work there.

The cases also show that the absence or slight prominence of some of the more classical symptoms of intussusception in cases where this lesion is known to have existed for some days (as when a tumour can be felt) should lead to a grave rather than to a hopeful prognosis. Thus a free discharge from the rectum of blood or of blood-stained mucus is not necessarily an unfavorable symptom, but the contrary, as indicating that the bowel is incarcerated rather than strangulated. In the foregoing cases the absence or small amount of pain is suggestive that the gut was tightly strangulated from the first, that is to say that gangrene quickly set in, and so deprived the strangulated gut of all sensation. If this argument be admitted, the child's appearance in Case 1 and its condition on admission to hospital are the more remarkable.

LII.—*Two Cases of Rupture of Intestine without External Wound.* By Herbert W. Page, M.C. *Read May 25, 1888.*

In consequence of the interest attaching to the paper read by Mr. Mayo Robson on February 10, and the discussion which followed it, I have thought that a short account of two cases which were under my care last year might be worthy of record, more especially as in both of them the question of laparotomy was very anxiously considered, and because one of them exemplifies a point of some importance to which no reference was made on that evening.

Case 1.—Henry S., æt. 50, admitted into St. Mary's Hospital on April 6, 1887, complaining of severe abdominal pain. At 10 A.M. on the 5th he was run over by a cab, the wheel passing across the right iliac region. He went straight home and to bed, and was in great pain the whole afternoon. In the evening an old right-sided femoral hernia came down, and being unable to return it as usual, he sent for a doctor, who reduced it by taxis in a quarter of an hour. The man, however, was no better, and on the morning of the 6th he walked to St. Mary's, and was at once taken in by the house surgeon. I saw him at 2 o'clock and found him markedly collapsed, with a pulse of 150, and great tenderness about the right abdomen, which showed signs of recent bruising and was rigid and immovable. There was a small lump, as of a femoral hernia, below Poupart's ligament. The breathing was entirely thoracic. He had not been sick. Tympanites was not marked. The presence of the hernia was a complication which first called for consideration, but as he was sure that a small lump such as was now to be felt was always present, we came to the conclusion that this in all probability had nothing to do with his present condition. The history of the accident moreover, and his general state, made us very suspicious, though by no means certain, that his bowel had been ruptured, but his collapse was such that I thought it quite useless then to open his abdomen, believing that he would very probably die on the operating table. Opium was accordingly ordered. I saw him again in the evening, and

found him distinctly worse. He had more pain, he had vomited twice, and now gave every indication of rapid sinking. Operation was altogether out of the question. He died at 5.50 A.M. on the 7th, forty-four hours after the accident.

At the necropsy some thickened omentum was found adherent in a femoral sac, and the omentum generally was thickened by chronic inflammatory changes. A quantity of fæculent matter was found in the neighbourhood of the cæcum, and there was much recent lymph in the right iliac fossa. The mucous membrane of the cæcum was much bruised, as was that also of the small intestine near it in two distinct patches. A foot above the ileo-cæcal valve a knuckle of intestine an inch and a half in length was deeply congested, but without well-defined marginal limits. Four and a half feet above the valve a rupture the size of a threepenny piece was found in the intestine. Here also there was much bruising of the gut, and considerable blood extravasation in the adjoining mesentery. The abdominal wall was much bruised, and much blood was extravasated into the mesentery near its root.

Although at the time when this man was first seen at the hospital the collapse was such as almost, if not entirely, to forbid any chance of success from laparotomy, it is worth asking whether, if he had come to the hospital within a short time of the accident, it would have been possible to make a diagnosis with equal certainty, or, having made it to have operated with much better prospects of saving his life. The rupture of the gut would have been found and been dealt with by suture or resection,—by resection in all probability because of the state of the surrounding bowel, but we should have also met with the other knuckle of deeply congested bowel which it would have been hardly right to leave alone. The chances of success from operation would, I fear, have been very poor indeed, and had we shortened the time of the operation by dealing with the piece of ruptured gut alone, there would have been grave risk of secondary perforation from sloughing in the other portion so severely bruised. That this is no imaginary danger is shown by the next case.

Case 2.—W. G., æt. 18, admitted on July 27, 1887. At 5 P.M. on the day before he was playing with some boys at a game then common, called "Buffalo Bill," a game at butting each other in the stomach with the head. So he was butted by one of his companions in the left iliac region. The lad fell down at once in greatest agony, and was unconscious for ten

minutes. After that he was carried home and put to bed. He very soon vomited, and vomiting had been constant since. On admission at midday on the 27th there was obvious fulness and very great tenderness and pain in the left iliac and inguinal regions. The left thigh was flexed, and that part of the abdomen was hard and motionless. Respirations were mainly thoracic, 44, his pulse was 142, his temperature 102° Fahr. He had not passed water since the accident, and this when drawn off was found natural and free from blood. Nothing abnormal was to be felt in the rectum, nor was there any blood stain on the finger, although he expressed an urgent desire to have his bowels moved. He was vomiting incessantly.

My colleague Mr. Silcock, and Mr. Wainewright, who had chanced to come to the hospital with Mr. Silcock, saw him with me, when I arrived at 1.30, and we very fully discussed the case together. Mr. Wainewright was in favour of laparotomy, but on the whole we thought that there was no sufficient evidence of rupture of bowel, that his symptoms were most probably due to local peritonitis as the result of the severe blow in the left iliac region, and that the better plan would be to wait, give opium, apply hot fomentations, and entirely abstain from food. On the following day he was rather better; morning and evening temperatures were 100° F. and 100·6°; pulse was 132 and 120, respirations were 40, he had passed water himself, and the vomiting was not nearly so frequent. So also on the 29th the record is one of undoubted improvement, and on the 30th it is noted that there had been "no vomiting between 9 last night and 10 this morning;" the abdomen was neither so tender nor so tympanitic; he could extend his thigh better; his temperature was 99·6° F. Everything, in fact, seemed to point to the wisdom of having treated him as we had, but late on the night of the 30th Mr. Crowle, my house surgeon, was summoned to him and found him in collapse, with cold extremities and running-away pulse. Mr. Crowle thought that this was in great measure due to the boy having had no food, and ordered him brandy and nutrient enemata.

On the 31st, he again seemed better, and for the first time he passed some flatus.

On August 1, respirations were 28. Morning and evening pulse 130 and 120, morning and evening temperature 100·4° and 100·6° F.

On August 2, he had a copious evacuation of his bowels

following a warm-water injection, which had been given him because he complained of great discomfort in his rectum, and because he repeatedly expressed a desire to have his bowels moved. The three following days presented no facts of new or special interest, but on August 3 there was again some collapse. From this he never seemed to rally. It became more marked, and he died on the morning of the 6th.

A considerable quantity of opaque yellowish fluid, of very offensive smell, was found in the peritoneal cavity. There were many adhesions between the intestinal coils in the lower half of the abdomen, the adhesions here and there being distinctly purulent. A large collection of pus was found in the left iliac fossa. Fifteen inches from the cæcum there was a perforation in the small intestine, opposite the mesentery. The opening had a diameter of a quarter of an inch, and its edges were thickened and surrounded with lymph. For the adjoining inch, in the centre of which was the perforation, the gut showed severe bruising and had a sodden appearance.

There were in this case two very distinct lesions,—the severe bruising and local peritonitis in the left iliac region, which gave rise in chiefest measure to the early symptoms, and which became purulent only when the character of the inflammation was changed by the escape of intestinal contents into the peritoneal cavity; and, secondly, the bruising of a piece of gut to so severe a degree as to lead to the gangrene of a small portion, and perforation therefrom in the course of a few days. For I think that in this case the perforation occurred, not immediately on the receipt of the injury, but on the 30th, rather more than four days afterwards. Had laparotomy, therefore, been done when he first came under observation, at a time when there was nothing specially suggestive of perforation, we should have discovered this piece of severely bruised bowel, and no more difficult question, perhaps, could have presented itself than that of determining whether it ought to be resected or whether it should be left alone. If done at all, however, then was the time to do it, for the chances of success must have been reduced to a minimum when the collapse had set in. I do not wish in the least to argue that the course of practically doing nothing was right in these two cases. Neither of them held out much hope of success from laparotomy, but as laparotomy gives the patient his only chance of life, the surgeon perhaps ought not to allow the gravity and uncertainty of the symptoms to deter him from operation. Both cases show what sorts of difficul-

ties may come before him, and how exceptional a thing it must be to meet with a case in which there are no complications of any kind, in which a simple rupture, and that alone, will be found on opening the abdomen. All such injuries are looked at nowadays with the hope of being able to do something for them by laparotomy, and it is from that point of view, and in association with the cases of Mr. Robson, that I have thought a short record of these two cases worthy of being presented to the Society.

LIII.—*Rupture of Small Intestine without External Wound.* By John Croft. *Read May* 25, 1888.

G. W., æt. 34, labourer, admitted into St. Thomas's Hospital Sunday, March 6, 1887, at 2 o'clock. Died April 5, 1887. Seventeen hours previously he had received an injury to the abdomen in a public-house row. He stated that he had been jumped upon. He had no medical advice before reaching the hospital. During the night he was in great pain and was sick two or three times. On admission, the patient's temperature was 103°, and he was thought to have peritonitis. I was sent for, and decided at once to explore the abdomen by median laparotomy. The operation was performed eighteen and a half hours after the accident. Three separate lesions were discovered, the ileum had been ruptured transversely to the extent of two thirds of its circumference at the junction of the upper and middle thirds; the lower surface of the mesentery, in the same neigbourhood, presented a laceration about 1½ inches in diameter; and the omentum above the level of the umbilicus had a considerable rent in it. Fæcal, and therefore septic, peritonitis had spread from about the ruptured viscera into the iliac, umbilical, and hypogastric regions. Enterorraphy was debated but was postponed, under the circumstances in favour of artificial anus. The peritoneum was very carefully irrigated and rendered aseptic with a warm solution of boracic acid from 16 to 20 per cent. in strength; the edges of the ruptured intestine were closely attached to the parietal wound, and the rest of this incision was completely closed in the usual manner. This operation lasted fully an hour and a half, and during this time the man was kept under the influence of ether. He was much exhausted by the proceedings, the pulse being very feeble, and the hands and feet were cold.

He recovered satisfactorily. The signs and symptoms of peritonitis were abolished, but a sharp attack of bronchitis ensued. This yielded to treatment and time, but he was prevented from gaining strength or flesh, partly by the irrepressible escape of intestinal contents at the artificial anus, and partly by the local irritation established on the abdominal wall by the contact of the intestinal secretions.

At the expiration of four weeks I thought that nothing

more would be gained by waiting, and therefore proceeded to close the artificial anus. By substituting rectal feeding for alimentation by the mouth, and by local irrigation of the intestine and all parts immediately concerned, the patient was prepared for the operation, which was performed on April 4.

The bowel was separated from its parietal attachments; the injured portion was resected, and the cut surfaces carefully united by twenty-six sutures of fine silk. Twenty of these were in one row, after Lembert's manner of suturing.

The operation lasted two hours and a quarter, and the patient was taking ether all that time, with the exception of a quarter of an hour, when his circulation was so feeble that the anæsthetic was discontinued and a brandy enema was administered.

He died thirteen hours after the operation.

The autopsy showed the suturing to have been perfect, and the peritoneum to be entirely free of any recent exudation or inflammatory products. The lungs were found very congested and airless.

Had the natural forces of the man been a little greater, he might have made a good recovery.

Remarks.—I have classed my remarks on the foregoing case under the following heads:

1. Early exploratory laparotomy.
2. Abolition of septic peritonitis.
3. Artificial anus or primary enterorraphy.
4. Method of suturing.

1. *Early exploratory laparotomy.*—In this case the history and symptoms indicated certainly an abdominal injury and acute peritonitis, but the precise situation of the injury and its extent were not clear. There was not any certain sign that the bladder or that the intestine was the seat of lesion. The presence of traumatic peritonitis was so marked as to warrant an immediate exploratory operation.

The case is not quoted as one especially showing the value of immediate exploratory laparotomy, for seventeen hours had already elapsed since the injury had been inflicted, nevertheless it may be taken as supporting and strengthening the growing opinion that in doubtful cases of internal injury without external wound exploratory laparotomy should be performed. In 1885 M. Chavasse, of the Val de Grace Hospital in Paris, communicated a paper on "Laparotomy in Cases of Deep Injuries of the Abdomen, and Ruptures of Intestine without External

Wound" to the Congress of French Surgeons. He had examined the reports of 150 cases, which yielded a mortality of 60 per cent., and had formed a decided opinion against waiting, and in favour of early operation; when there was reason to think that the intestine had been seriously contused he would advise early exploratory operation.

From my own observation and experience of instances of abdominal injuries and of exploratory operations, I had arrived at opinions similar to Dr. Chavasse. It will be understood that I am referring to serious injuries.

2. *Abolition of septic peritonitis.*—With regard to this condition and to the election between the formation of an artificial anus and primary enterorraphy, this case may be looked upon as one of the crucial cases or pioneer cases in this branch of surgery.

The symptoms at the time of the man's admission, and the condition displayed on opening the peritoneal cavity, were those of acute septic peritonitis. After the purification and closure of the cavity the peritonitis ceased and did not recur.

This fact, taken in combination with the records of other cases of successful abolition of traumatic septic peritonitis, should encourage us in the opinion that the presence of symptoms of peritonitis is not a contraindication to surgical interference. At the same time it ought not to be made use of as an excuse for delaying operative measures until evidence of septic inflammation can be recognised.

When I found the ruptured portion of intestine bathed in the products of fæcal peritonitis, and that its edges were tumid and soaked, I imagined that it would be unsafe to submit such a state of parts to a cutting operation and enterorraphy. I feared that the septic action might not be abolished, and that union might not take place, and in that case that the condition would become quite hopeless. The after-experience of the case has led me to think that I was mistaken. Without any farther purification than careful washing in 20 per cent. solution of boracic acid, the bowel united to the edges of the wound and without any relapse of peritonitis. The artificial anus was established aseptically so far as the peritoneal union was concerned. From this experience I think that it would have been a safe practice if I had trimmed the edges of the ruptured gut and completed an enterorraphy by Lembert sutures. If that had been successful, and I believe it would have been, the man's life might have been per-

manently instead of only temporarily saved, and the case would have been a triumphant one for English surgery.

3. *Artificial anus or primary enterorraphy.*—The case has an important bearing on this choice of practice. Dr. Chavasse, in the communication to the Congress of French Surgeons already referred to, had drawn the conclusion that in injuries of the character under consideration, when the lesion of the gut involved two thirds or more of its circumference, an artificial anus should be formed by attaching the edges of the rent to the edges of the abdominal incision. I followed that line of practice in the confident hope that I should be able at some future time to make a radical cure of this abnormal state. As subsequent events proved, that hope was fallacious. Had the lesion and artificial anus been made in the large intestine or even low down in the ileum, the result might have been different. The inanition consequent upon the escape of the contents of the small intestine at the junction of its upper and middle thirds, combined with other worries to render the patient unable to bear the long operation of excising the artificial anus, resection of the injured gut, and the passage of some twenty or more sutures.

In this case the new orifice was a large one. As the rupture was large, so the anus was large. The result would have been better had the "nothus" been small and of the dimensions of a fistula, but it may be added that had the rupture been of small extent, primary enterorraphy would have been not only justifiable but the better line of practice. In conclusion, under this head of artificial anus *versus* primary enterorraphy, I may set down the following reasons for attempting the immediate radical treatment:—

1. That existing peritonitis, though septic, may be abolished and the parts made aseptic.

2. That the already existing septic peritonitis does not essentially forbid union of the peritoneal surfaces as these parts may be purified, rendered aseptic, and fitted for union.

3. That the empty and paralysed state of the recently ruptured or contused intestine is favorable for the *technique* of the operation, and avoids the secondary preparation of the intestine for operative procedures.

4. It avoids the inanition and debility of the patient consequent on the establishment of a false anus.

5. And it avoids the external irritation, swollen abdominal walls, and the septic state of these irritated parts about the same orifice.

6. It avoids the second long and dangerous operation, and the indispensable preparation of the patient for such an ordeal.

4. *On the method of suturing* I have only to state that my experience is in favour of Lembert's suture. It may be rapidly inserted, and it is equally efficacious with the Czerny-Lembert mode. More than this the Lembert method has the advantage of being more expeditiously carried out.

LIV.—*Case of Stone, in which Lithotomy was performed twice within two months.* By J. Ward Cousins, M.D. *Read May* 25, 1888.

W. C., æt. 34, a fish dealer, was admitted into the Royal Hospital, Portsmouth, in January, 1882. The patient was short in stature, of dark and sallow complexion, and his countenance carried an expression of great and prolonged suffering. His family history indicated no tendency to gout, rheumatism, or gravel. He had suffered for thirteen years from vesical trouble, and for three years he had been quite unable to follow any employment. During this period he had continually discharged small stones, varying in size from a pea to a large shot. Some of the calculi were round, and others were very irregular in shape. When questioned as to the total quantity of calculous matter he had discharged since the commencement of his illness, he said "that if all the stones had been saved he was sure there would be enough of them to fill a pint measure." Pieces of stone had often lodged in the urethra, and on several occasions they had caused irritation and retention of urine. For many months he had been compelled to keep his bed, suffering constant pain in the region of the bladder and incontinence of urine. He had laboured also under frequent attacks of lumbar pain, generally on the left side, and extending downwards to the left groin. On several occasions the left testicle had been swollen and extremely tender. Sometimes these attacks were attended with the discharge of bloody urine, which contained many small and irregular clots.

On admission, the patient was scarcely able to stand from weakness, and the back and perineum were much excoriated. The urine was horribly offensive, and loaded with bloody mucus; specific gravity 1020, and total quantity passed in twenty-four hours amounted to about 16 or 20 oz. On the addition of nitric acid the precipitated albumen filled two thirds of the test tube. He complained of great tenderness and pain in the left loin, and the testicle of the same side was swollen. The temperature fluctuated daily between 101° to 103°. He took freely milk and fluid nourishment.

After a few days' rest the patient was carefully examined

under ether. The sound passed readily into the bladder, and came at once into contact with a foreign body, which appeared to be immovable, and, as the instrument passed over its surface, a dull and feeble sound was occasionally audible. Rectal examination indicated only some thickening in the posterior wall of the bladder. With the concurrence of my colleagues I at once introduced my long beaked staff, and performed lateral lithotomy; 2¼ oz. of soft calculous matter were removed, mingled with stinking mucus and decomposing blood-clot. The mass was horribly offensive, and the air of the operating theatre was immediately filled with a repulsive odour. Many pieces of stone were removed with the scoop, and after a careful exploration of the bladder in every direction with the finger it was assiduously washed out with warm carbolic water, and the cavity thoroughly cleansed and deodorised.

The patient rallied well after the operation. During the following week severe fever occurred with rapid pulse and high temperature. There were no abdominal symptoms. The urine soon became clearer, and increased in quantity. On the fourteenth day some urine passed by the urethra. The patient now rapidly improved and increased in weight. The daily average of urine amounted to 30 or 35 oz. It contained a very little muco-pus, and only a moderate quantity of albumen. He left the hospital convalescent at the end of five weeks. In about a fortnight, however, he returned, complaining again of acute urethral pain and frequent micturition. He said "that the old symptoms came on quite suddenly, and he was certain that another stone had lodged at the neck of the bladder." On examination, a small concretion was readily detected in the prostatic portion of the urethra. Chloroform was at once administered, and an attempt was made to grasp it with long urethral forceps. Other efforts to dislodge it from its position and return it into the bladder, so that it could be seized with a lithotrite, were also unsuccessful. Median lithotomy was then performed, and a small and irregular stone which had been firmly fixed near the neck of the bladder was removed. He again made a rapid recovery, and left the hospital four weeks after the second operation. During the last six years he has enjoyed good health, and has been constantly engaged in his trade. Up to the present date he has not discharged a particle of calculous matter, and has had no recurrence of any vesical trouble. The urine was examined to-day (March 14, 1888). Sp. gr. 1015. It still contains a

trace of albumen, and a little muco-pus. No renal elements can be detected by microscopic examination, but pus-cells are present, and some crystals of triple phosphate.

Character and composition of the concretion.—After washing and drying, the mass presented a light brown colour and granular structure. It could be readily crumbled on pressure. On examination, it was found to consist of uric acid mixed with phosphate of lime. Ammonia was present only in minute traces.

May 18, 1888.—Urine presents the same characters. Urea is generally a little below the normal, and varies from 1·3 per cent. to 1·7 per cent. Patient in good health.

The history of the case, the complex character of the symptoms, and the persistent discharge of small concretions, clearly indicate that the patient was the subject of chronic calculous pyelitis, and that during the prolonged disorder part of the renal gravel passed along the urinary passages, and at length escaped through the urethra, while another portion was trapped in the bladder, and there became mingled with blood-clot and muco-purulent secretion.

At the time of the operation the calculous mass presented throughout a uniform appearance. In consistency it resembled fresh mortar, and there were no traces within it of concentric deposition. The phosphatic elements were additions collected during its retention in the bladder. A soft concretion of this kind composed of distinct grains cemented together by tenacious material must be formed under very different conditions from those which regulate the development of stratified calculi. The retention of such a fetid mass within the bladder for a lengthened period, and the occurrence of only a continued and irregular form of septic fever, may be regarded, in my opinion, as an illustration of the feeble power of absorption exercised by the vesical surface, and the protective character of its mucous products.

An analysis of the symptoms suggested at once the presence of a compound renal and vesical disease, although the most urgent manifestations pointed clearly to disorder of the bladder. A group of renal symptoms, radiating from the left loin, were present throughout the illness, but these were in a measure overlapped by the characteristic signs of bladder trouble. The composition of the urine, however, and the continuous discharge of small concretions, rendered the existence of chronic pyelitis or nephropyelitis clearly evident. It is

worthy of note that the patient throughout his long illness—although he had marked exacerbations and remissions of pain—had never suffered from a violent paroxysm attended with gastric manifestations which could be recognised as an attack of renal colic. This fact appears to admit of some explanation from the structure of the concretion. The particles of gravel of which it is composed are small, and their favorable size enabled them to pass through the dilated ureter without causing serious obstruction.

With reference to the treatment, the dangerous and prostrate condition of the patient certainly admitted of no delay, and an immediate effort to clear out the bladder and to establish continuous drainage afforded the only hope of relief. The presence of a foreign body of some kind was plainly evident from the sounding. At the same time, the absence of any click or thud, the roughness of the surface, and the immobility of the mass, suggested to me that probably some complication would have to be encountered. The lateral incision was selected for the purpose of obtaining a thorough exploration of the bladder; and for this reason it was a more advantageous proceeding than any modified median operation even with dilatation and division of the prostate. The operation ensured, too, a free and incontinent escape of urine with complete rest for the diseased organ, and it removed at once all painful micturition and straining. It permitted, moreover, the effectual and persistent drainage and washing out of the vesical cavity, which for a long period had been in the condition of a chronic abscess distended with a stinking concretion, and around it the urine slowly percolated. Even if no foreign body had been present, perineal cystotomy for the purpose of securing temporary incontinence and free bladder drainage would certainly have been judicious surgical treatment. In many cases also of fetid cystitis associated with prostatic disease, spinal injury, or paraplegia, the patients are certain to become sooner or later the victims of pyonephritis, septic poisoning, and bedsores; and even under these unfavorable conditions, the timely performance of the operation often gives a fair prospect of relief.

Again, the cystotomy had a very beneficial influence over the whole urinary track. The pyelitis must have been seriously aggravated by the state of the bladder, which obstructed the flow of urine along the ureters; but as soon as the contents of the vesical cavity were evacuated and continuous drainage

established, the discharge of all the renal products was secured directly after their formation.

As regards the second lithotomy for the removal of the small fragment which became suddenly impacted at the neck of the bladder, it may be considered, under the circumstances, rather a severe procedure. It was done, however, to relieve the acute sufferings of the patient after many failures to remove it through the urethra, and also after other efforts to return it into the bladder, so that it could be seized with a lithotrite. The operation permitted another exploration of the organ, and gave an opportunity of possibly avoiding a similar accident in the future. The fragment was, no doubt, a piece of the old concretion left behind at the time of the first operation. It must have been attached somewhere to the mucous surface, and subsequently became detached, and then lodged in the urethra.

During the last six years the patient has been under observation, and throughout that period he has enjoyed good health, carried on a fatiguing business, and lately gained in weight. The old vesical symptoms have never recurred, and he has never passed a particle of calculous matter. Still, unfortunately, the cure is not actually complete. The urine generally exhibits a slight opacity, and contains a few pus-cells mixed with epithelium which are shed from some part of the lining membrane of the urinary passages. It is satisfactory that there is no serious evidence of renal trouble; at the same time, the persistent presence in the urine of a few pathological elements leads up to the conclusion that with this slight and latent disturbance the old disorder might readily be roused again into activity.

In conclusion, the history and progress of the case suggest the question as to the essential character of the disorder—Ought it to be regarded in the light of a local trouble, and all its manifestations the outcome of a chronic calculous pyelitis; or, on the other hand, must it be considered as a constitutional disease? The subjects of urinary concretions are generally described as labouring under some sort of diathetic tendency, and in many cases a morbid state of the system generally can be recognised as an important factor in their production. But in other cases the existence of a special diathesis is only a conjecture, and pathological processes limited to the urinary tract itself are quite sufficient to explain the precipitation and concretion of the ordinary constituents of the urine. The accumulation of an abnormal amount of uric acid in the blood

is followed by an increase in the quantity excreted by the kidney; still, the formation of uric acid gravel, and the development of uric acid calculi, do not always indicate excessive elimination. There is no evidence to prove that when present only in the normal quantity, it may not sometimes be thrown down under local conditions, which hinder its retention in a state of solution.

The case which I have submitted to your criticism appears to be an example of the class of calculous diseases which depend mainly upon local causation. The prolonged disorder probably broke out in the pelvis of one kidney by the occurrence of a pyelitis. Then followed the deposition of the uric acid in the solid form; at the same time the inflammatory elements themselves served as points of deposit for the formations. The presence of morbid secretions always exercises a potent influence upon the urinary constituents, and certainly favours their release from a state of solution, while their component particles are at least liable to become the invisible nuclei in the development of granular concretions.

The cause of the pyelitis is obscure, still, according to the generally accepted theory, it ought to have been excited by crystalline deposits formed in the kidney, and subsequently floated into the pelvic cavity. But whatever morbid forces may have been active during its initial stages, when once it was established, it can be fairly regarded as the chief factor in the production of the renal gravel and small concretions. With a concentrated condition of the urine, a persistent obstruction to its discharge, and the presence of muco-purulent secretion, some of the exciting causes were present which tended towards the deposit of calculous matter without an abnormal increase in the excretion of uric acid.

The sudden disappearance of the urinary concretions after their continuous formation for many years, and the rapid rebound from a grave constitutional condition towards health, are facts certainly in favour of the local character of the whole disorder. With this intepretation it is easy to account for the favorable changes which immediately followed cystotomy and efficient drainage of the bladder; but, on the other hand, if the disease be regarded mainly as an expression of a faulty state of the constitution, then it is quite evident that simple surgical treatment has abruptly subdued—at least for a time—a profound diathetic tendency.

Report of a Committee of the Society appointed to examine the Calculus referred to in the foregoing paper and exhibited by Dr. Ward Cousins.

The calculus (or mass of calculous matter) was in fragments, some large, with one surface rounded,* the rest rough as though they were fragments of an original calculus of considerable size probably as large as a hen's egg. There were also masses of smaller size, with rough and jagged surface. The fragments examined were friable, were not laminated, and showed no appearance of radiating crystallisation. The calculus is best described by comparing it to a coarse mortar. The colour was a pale brown, very like that of dried London clay. On powdering a round portion there were found, mixed with finely-divided dust, pieces of tough substance looking like frayed brown paper, and also some short reddish hairs. The tough membranous substance showed no definite structure when examined under the microscope. The powder, when examined by the microscope, was evidently crystalline, but no separate crystals, no spheres, and no sign of regular lamination or of fibrous crystallisation appeared.

On the addition of dilute hydrochloric acid to the powder or to a fragment, effervescence occurred and lasted for some time. The powder or fragment was afterwards found to retain its original size, but to be soft, containing under the microscope broken fragments of crystalline matter in which no definite form could be traced. If acetic acid were added to some of the powder placed under the microscope, effervescence occurred, and much of the crystalline matter disappeared, leaving a matrix of organic nature, sprinkled with fragments having a crystalline appearance. In a short time crystals of uric acid appeared in the fluid, and also encrusted the matrix filling altogether a considerable part of the field.

When boiled in water a portion of the stone was dissolved, the solution giving an alkaline reaction. On the addition of hydrochloric acid to the solution a white precipitate was obtained which was soluble on heating. The solution also effervesced slightly. The portion of the stone insoluble in water effervesced perceptibly on the addition of hydrochloric acid indicating *carbonic acid*.

A portion of the calculus when heated upon platinum foil

* [The rounded surface was caused by the vessel in which the mass was dried. —J. W. C.]

gave off a fetid odour of burning organic matter, and left a brownish and black residue, which when moistened with dilute hydrochloric acid, imparted a violet tinge to the flame of a Bunsen's burner, indicating *potassium*.

The powdered stone was treated with hydrochloric acid and water and the mixture filtered. The residue gave a well-marked murexide reaction when evaporated down with nitric acid and moistened with ammonia, indicating *uric acid*. To the filtrate ammonia was added and afterwards acetic acid; no precipitate was produced, indicating the absence of oxalate of lime.

The solution gave a yellowish precipitate on the addition of a small quantity of perchloride of iron; also, when treated with excess of ammonia, the solution deposited crystals of phosphate of lime and triple phosphate, indicating *phosphoric acid*.

To another portion of the solution ammonium oxalate was added, and a white precipitate was formed, indicating *calcium*. This was filtered off, and to the resulting filtrate phosphate of soda was added, and the whole rendered alkaline with ammonia. A crystalline precipitate was formed, indicating *magnesium*.

To another portion of the filtrate was added platinum chloride and excess of alcohol. A precipitate was formed, again indicating *potassium*. The original hydrochloric acid solution gave off, when heated with Liq. potassæ, a gas which smelt of ammonia, fumed greatly when a glass rod dipped in hydrochloric acid was held in the mouth of the test-tube, and also gave a distinctly alkaline reaction to litmus paper, indicating *ammonium*. Further, the solution of a portion of the stone in water gave similar reactions when treated in the same way.

The stone was therefore found to consist of uric, phosphoric, and carbonic acids, with calcium, magnesium, ammonium, and potassium as bases.

A portion of this calculus was submitted to Mr. Veley, of the Chemical Department in the Museum, Oxford, who most kindly examined it and made the following report:—"The calculus was found to be not quite homogeneous, and hence different analyses varied somewhat. The percentage of lime was 19·8, corresponding to calcium carbonate 35·36 per cent. The percentage of fixed residue was 32·05; the mean between these two, viz. 33·7, giving a percentage of calcium carbonate, which may be accepted without appreciable error. The car-

bonic acid was determined by Geissler's apparatus to be 27·4 per cent., but this was obviously too high. It is probable that some constituent of the calculus reduced the dilute nitric acid used to nitrous acid which then decomposed the uric acid."

It appears from a preceding portion of this report that the uric acid was in a combined condition, and, also, that a small quantity of the carbonic acid was combined with ammonium, so that it may be concluded that the calculus consisted of *carbonate of lime*, *urates of ammonium*, and possibly *of potassium*, *phosphates of potassium and magnesium*, and a small quantity of *carbonate of ammonium*.

The Committee desire to point out the extreme rarity in the human subject of urinary calculus composed of carbonate of lime. In the horse such concretions are not uncommon, and often assume a condition resembling that in which the calculus under consideration was presented to the Committee. In the rare cases where carbonate of lime calculi have been found in man they have for the most part been of small size, and therefore the large amount of this deposit renders Dr. Ward Cousins' case the more remarkable. A large proportion of the stone, however, is composed of uric acid in combination with an alkali, and it would seem probable that originally the stone was composed of uric acid; that being subjected to the action of highly ammoniacal urine its chemical constitution was altered and its structure broken up. The carbonate of lime was probably the result of a reaction between carbonate of ammonium and lime salts in the urine. Finally, it must be noted that the presence of so much "muco-pus" afforded a colloid material eminently favourable to calculous deposit and to molecular disintegration of calculi already present, when once the stone was formed.

William Ord.
Robert Maguire.
Archibald E. Garrod.

LIVING SPECIMENS

DESCRIBED BY CARD.

*** Published in accordance with the Regulation relating to the exhibition of living specimens at the meetings of the Society, viz. that "each case shall be accompanied by a card containing a brief description of the points it illustrates, such card to be retained by the Secretary for publication or not in the *Transactions* at the discretion of the Council."

I.—*Cases of Hereditary Ataxia* (*a Family of five*). By James F. Goodhart, M.D., and George Carpenter, M.B. *Exhibited November* 25, 1887.

THE exact nature of these cases is open to doubt. The symptoms undoubtedly most resemble insular sclerosis, and they are wanting in the usual feature of Friedreich's disease, viz. evidences of posterior sclerosis. The patellar reflex is exaggerated, not absent. Still, as the absence of that reflex is not an invariable feature, it may well be questioned whether Friedreich's disease should not receive a somewhat ampler definition, so as to include cases of this sort. The points which appear to be of especial interest and of probable importance in any attempt to establish the true nature of the disease in the present instance are these:

1. All the children have had convulsions.

2. That the youngest child has, as yet, only nystagmus, and the next to it, a boy of three years, is much less affected than are the three elder children.

3. That the baby, and perhaps the boy of three years, alone have a properly developed head.

It appears, therefore, that as these children advance in age so they leave the development of their brains behind them; and this is shown by the cyrtometer tracings of the several heads.

Family history.—Paternal.—The great-great-grandfather lived to the age of 60. The great-great-grandmother died at the age of 89. Both great-great-grandparents are said to have been healthy people. The great-grandfather died, aged 76; he was always very healthy. The great-grandmother died aged 64; she is said to have enjoyed excellent health. The grandfather is alive, aged 56, has good health, and has never been laid up. The grandmother is a very healthy woman, and is 57 years of age. The father has been deaf since 12 years of age. This is due to a perforation of the membrana tympani on either side. He seems very silly and dense, but this may be due to his ear trouble. He has never had, so he says, any venereal complaints, and there is no alcoholic history. There are four aunts, all of whom are said to enjoy good health. An uncle died, aged 2, from "water on the brain." The great-grandmother, grandfather, and three aunts were or are deaf.

Maternal.—The great-great-grandfather lived to the age of 64; he was always strong and active. The great-great-grandmother died aged 82; she was always very healthy. The great-grandfather died of "old age," aged 75. The great-grandmother died aged 84; she was quite healthy all her life. The grandfather died at the age of 30 from "breaking a blood-vessel." The father of the children fancied he was "consumptive." The grandmother is alive and well, and has good health. Three aunts are alive and well, and enjoy good health, and there is an uncle living who is quite well and strong. An uncle died aged 3 months, the cause being unknown. The mother has the best of health. She seems to be an intelligent woman, says she has never had any miscarriages, and gives no history of venereal troubles. From her appearance she is a sober woman, and is said to be so. All her confinements are stated to have been tedious, but it was never found necessary to use instruments. Rosie is said to have been a cross-birth; the father states she was "very nearly smothered."

The father and mother are first cousins, the father's mother and wife's mother being sisters. The maternal grandfather and grandmother were first cousins. In neither family is there any history of nervous complaints or alcoholism.

The mother has had seven children at periods averaging fourteen months. Five are living, and the subject of this notice, two deceased. One of the latter died from "bronchitis and pleurisy." This child was a year and eight months old at the time of death, and she had neither shakes, convulsions, nor movements of the eyes. The other died when three months

old from bronchitis, and was quite free from the above troubles. The teething of the whole family has "always been bad," and in the case of those living attended with convulsions.

Rosie F., æt. 8.

Previous history.—She had yellow jaundice in 1884 and bronchitis in 1885; with these exceptions she has never had any other ailments. When about three months old her head used to nod up and down. The father believes she walked all

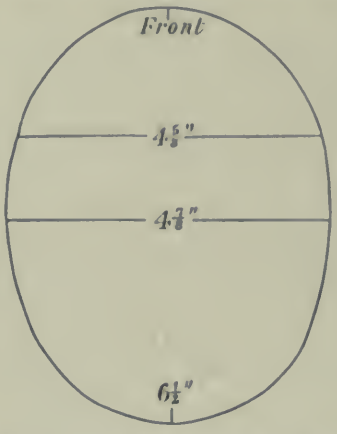


FIG. 10.—Cyrtometric tracing of the skull.

right to commence with, but soon began to tremble, and in this respect she became worse and worse. He considers her intellect to be very dull. She had convulsions during infancy and was a seven months' child.

On admission.—The child is peeky-looking, with rosy cheeks, but of spare habit. She answers questions fairly intelligently, but there is evidently a considerable vacancy, and she is not quite "all there," so to speak. Her speech is scanning. The head is a narrow one from before backwards, and the forehead is decidedly pointed. Her walk is ataxic, deliberate, with constant tremulous movements of the head and neck, and she goes through the performance with great caution, interrupted every now and again, however, by a drunken-like totter, the hands being thrown forward to clutch at some support. She prefers to go along catching hold of some fixed object so as to steady herself in her progression.

When given a mug to hold and place to her mouth, the movements of her arm are tremulous, but she reaches the goal at last, although with considerable danger to the fluid contents. Nystagmus is well marked, the oscillations being slightly oblique and lateral. When the tongue is placed out to its fullest extent the posterior part is tremulous. When quiet there is a constant, fairly regular jactitation of the head, as in paralysis agitans; but on the least movement the excursions are very violent and irregular, and it is owing to this that her walking powers are so feeble. Those facial muscles that are in action present tremulous movements. The pupils react to light and accommodation. She has ankle- and knee-clonuses, and her superficial and deep reflexes are brisk. The galvanic reactions are normal. All her muscles are quiet and motionless, unless put in action. Ophthalmoscopical examination reveals no change in the fundus oculi. All her organs are perfectly healthy.

Wallace F., æt. 6½, had inflammation of the lungs in 1885. He never had any other illnesses. The mother noticed

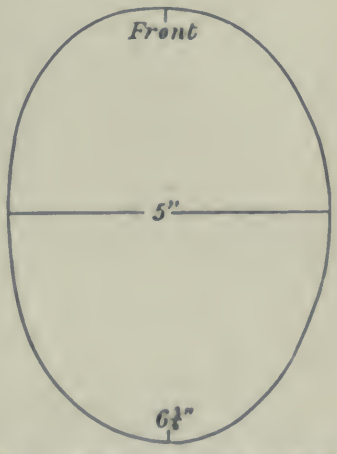


FIG. 11.—Cyrtometric tracing of the skull.

when the child was three months old that his head was "swelling at the back." The doctor told her that he had "water on the brain." His head became very heavy and the mother complained of its weight making her arms ache. She says that he seemed a nice little fellow up to that period, quite

like an ordinary baby. The parents first noticed peculiar movement of the eyes. When he commenced to walk they found that he trembled. They did not notice any movement of the head. He is considered dull. He had convulsions during infancy.

On admission.—The child is silly and laughs vacantly. His hair and eyebrows are of the colour of recently spun silk. He has alternating squint, and nystagmus is well marked. The pupils react to light and accommodation. He also is ataxic, but less so than either Rose or Herbert. All his reflexes are exaggerated, and he has ankle-clonus on both sides, better marked in his case than in that of Herbert. His muscular development is better than either of the above children, but he has a rounded back and his ribs are knobby. His intellect is decidedly feebler than that of the others. Speech in his case is scanning. The ophthalmoscopical appearances are as follows:—The retinal pigment is very deficient, in the majority of places quite absent, so much so that the choroidal vessels are seen close up to the disc with the greatest possible clearness. The discs are pallid—by this is not meant atrophic whiteness—and owing to their colour and the absence of any pigmental margin they are not easily discernible. The retinal vessels are perhaps smaller than usual. Such appearances, however, would not be considered out of the way in so fair a child. The nystagmus is of a deliberate, semi-rotatory kind.

Herbert F., æt. 5, had inflammation of the lungs in 1885, but with this exception he had had no other illnesses. Soon after this the father noticed that his feet began to shake and he walked like his sister. He does not recollect that the boy's head shook—he never noticed that. The child has been getting gradually worse, and his father thinks him very dull. He had convulsions during infancy.

On admission.—He has all the appearances of a child of weak intellect, and when he talks his speech is scanning. He has a long, narrow head, like the elder child, keeled along the coronal suture, behind somewhat depressed above the occipital protuberance. When he moves his eyes into the outer canthi there is limited nystagmus. Whilst in bed there is a slight amount of general tremor on movement, and all the reflexes are exaggerated. There is ankle-clonus well marked on the left side, and to a less degree knee-clonus and ankle-clonus on the right. He walks more unsteadily than the girl, and

his arms are very ataxic when carrying a mug of milk to his mouth. At this time his grasp seems clumsy, but, as with Rose, there is no definite local muscular wasting. The child

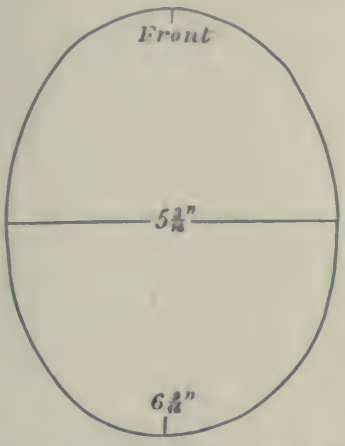


FIG. 12.—Cyrtometric tracing of the skull.

is spare, its back a little rounded in the dorso-lumbar region. The calves are slightly larger as compared with the rest of the body. The pupils react to light but not to accommodation. There are no changes in the fundus oculi. All his organs are healthy.

Teddy F., æt. 3, has never had any illness. He has been treated for bandy legs. The father says he is a bright little fellow, but there is "a heaviness over the eyes," and he thinks the head is swelling there. He is accustomed to follow his father about and play with his tools. The parents have never noticed any movements, and he can walk and run. The mother states that his head was large and swollen when he was born, and he always was dull in her opinion. He had convulsions during infancy.

On admission.—He is somewhat dull, but not to the extent of the other children. His speech is not at all scanning. He is able to walk and run, but during the former he is not perfectly steady, the feet being crossed in front of one another, and occasionally he stumbles. With both arms there is just a slight tremor when carrying a mug of milk to the mouth. The head is held steadily, and there is no nystagmus. The

forehead is much more square than in the other cases. The reflexes are brisk over the trunk and legs. Neither wrist- nor elbow-jerk can be obtained. On first attempting for ankle-

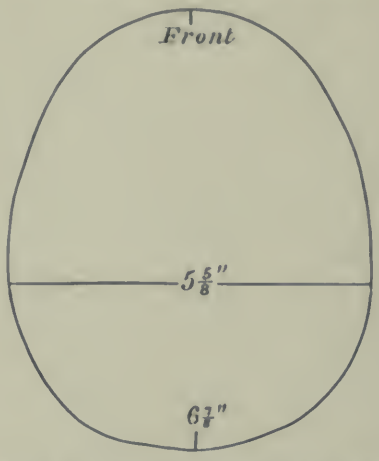


FIG. 13.—Cyrtometric tracing of the skull.

clonus it was noted on the right side, and there was a tendency to it on the left, but subsequently these could not be obtained. He is much better nourished than the other children, and the muscular tone is good. The ends of the long bones are enlarged, the ribs are knobby, and the chest hour-glass shaped, being pinched in just below the level of the nipple. There is antero-lateral bowing of the tibiæ. All his organs are healthy with the exception of the lungs, where there is a little bronchitis. The pupils act to light but not so well to accommodation. The right optic disc is palish, especially on the temporal side. The physiological pit is well marked. The vessels seem small, otherwise the fundus is healthy in appearance. The same description will apply to the left eye.

Maria F., æt. 14 months, has never been ill. The mother says that when a month old her eyes began to roll and she had convulsions at that time. She had "bad teething" and convulsions again then. She states that Teddy and Maria were "deathly" at birth, and continue to be so in their sleep. The rolling of the eyes was more particularly noticeable in these two.

On admission.—She is a fat, chubby child, but rather pasty looking. On watching her she does not present an altogether intelligent appearance, but she plays with her toys, crows and laughs, and gives vent to expressions of delight when placed on the cot with one of her brothers.

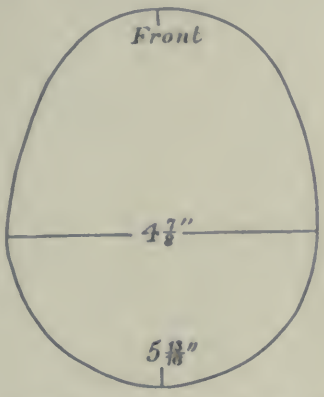
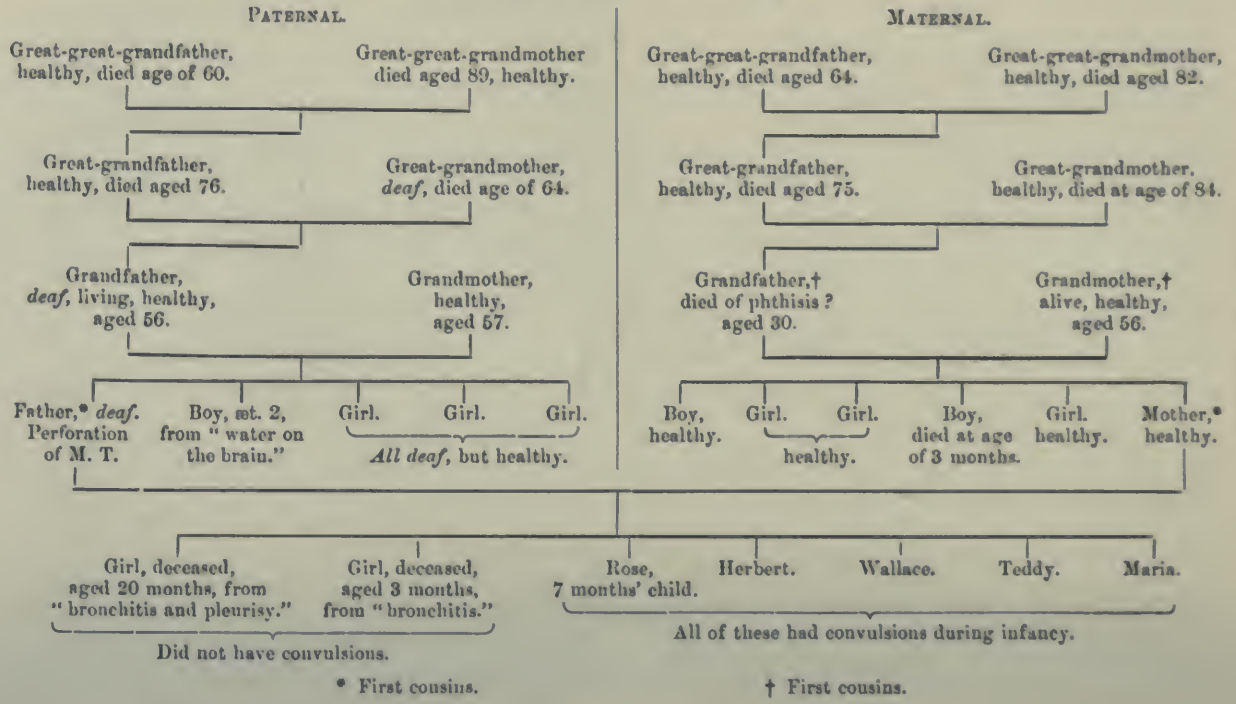


FIG. 14.—Cyrtometric tracing of the skull.

The head in her case is somewhat pointed anteriorly and the anterior fontanelle will about admit the tip of the index finger. She has well-marked nystagmus. When the eyes move in the lateral planes they oscillate whenever brought to a stand-still. Whilst observing her in the cradle every now and again one could detect a slight tremor of the neck-muscles, and a faint tremor of the corrugator supercilii on either side. She has a rickety rosary, the ends of the long bones are enlarged, and the chest is hour-glass shaped. She will pick up and handle any light object; no tremor can be detected during such times. Her reflexes are brisk everywhere—legs, trunk, and arms—with the exception of the gluteal, which seem normal. She also has slight bronchitis, but with this exception her organs are healthy. The pupils act to light; reaction to accommodation could not be obtained. The left disc is somewhat pallid on the temporal side. The retinal pigment is thin or absent over areas varying in extent. Around the disc in some places the choroidal vessels can be seen with perfect distinctness. The right disc, choroidal vessels and retinal pigment are the same as on the other side.

Family Tree of the F. Family.



* First cousins.

† First cousins.

DESCRIPTION OF PLATE VIII.

Drs. Goodhart's and G. A. Carpenter's Cases of Hereditary Ataxia.

1. Rose, aged 8 years.
2. Wallace, aged 6½ years.
3. Herbert, aged 5 years.
4. Teddy, aged 3 years.
5. Maria, aged 14 months.

From photographs by Mr. W. Talbot Brett.

2 1

3 3 4

W. T. Smyth, ad Nat. Fec. Danielsson & Co. Photo. Print.

II.—*Case of Synovial Cyst in Connection with the Right Shoulder-Joint.* By G. H. Makins. *Exhibited November* 25, 1887.

R. T. C., M., æt. 52, cabman. The right shoulder was quite strong until twelve months ago, a little before which time he thinks he strained it in pulling a horse.

The earliest signs of disease were pain and creaking in movements of the joint, and four months later he noticed swelling. Enlargement was first noted at the outer aspect, but swelling in the pectoral region was soon apparent, and since that time the arm has been almost useless.

He was admitted into St. Thomas's Hospital in August last, and on the 30th of that month the cyst was tapped and 15 oz. of thick, turbid, synovial fluid of a pea-soup like colour was evacuated. The cyst soon refilled, and at present it is larger than when first seen.

Present condition.—A large ovoid swelling (10 by 6½) occupies the right pectoral region and axilla, extending downward to the fifth intercostal space in the nipple line, and laterally to within 2½ inches of the left border of the sternum in the second interspace. The margin of the great pectoral muscle can readily be made prominent on its surface. The axillary measurement is 27 inches against 17 on the opposite side. Circumferential measurement of the chest over the centre of the chest gives 21 inches on the affected against 16 on the healthy side. The deltoid is somewhat atrophied, but the joint capsule is distended beneath it, and distinct fluctuation can be obtained between it and the cyst. The cyst is not translucent. The movements of the joint are very limited and accompanied by occasional creaking. The arm hangs abducted from the trunk about 4 inches, and any movement is effected chiefly by movement of the scapula.

The cyst is probably a dilation of the bursa beneath the subscapularis tendon.

III.—*A Case of Embolism of a Branch of the Retinal Artery in a Case of Chorea.* By J. B. Ball, M.D. *Exhibited November* 25, 1887.

WILLIAM L., æt. 15 years and 8 months, has been attending as out-patient at the West London Hospital for Chorea since August.

He never had rheumatism nor scarlet fever. Two brothers and the maternal grandmother have suffered from acute rheumatism.

The chorea first appeared about eight years ago; he has never been quite free from slight choreic movement since.

Fig. 15.—Visual field of the right eye, showing scotoma.

For the last six months he has been worse; it is most marked on left side, but it has never, however, been severe. The heart's apex-beat is normal; there is a soft systolic apex-bruit.

On the morning of November 9, when he got up he noticed

a darkness before the right eye. He could only see the upper part of objects with that eye.

On November 14, an ophthalmoscopic examination was made, with the following result:—The fundus is normal, with the exception of an arterial branch and a small area of the contiguous retina and optic disc. This branch, which runs outwards above the macular region, appears constricted, especially at its origin. The artery is partly obscured by a considerable haziness which begins on the disc, and stretches out along the course of the artery to beyond the yellow spot. The chart shows the defect in the visual field (Fig. 15).

At this date (November 25) the haziness has considerably cleared up, but the retina for some distance along the course of the artery lacks its normal transparency, while the upper and outer margins of the optic disc appear slightly blurred as compared with the rest of its outline. The artery appears slightly constricted at its origin, and for some distance outward it is paler and less distinctly defined than the other arteries of the fundus. By pressure on the globe pulsation can be produced in the arteries on the disc, with the exception of the branch above alluded to.

IV.—*Case of Erythema Gangrenosum, or Raynaud's Disease (?).* By Sidney Coupland, M.D. *Exhibited December* 9, 1887.

GEORGE D., æt. 14, errand-boy, was admitted into the Middlesex Hospital on November 30, 1887.

On dorsum of each hand and fingers there were numerous small brownish patches of circular shape, and on the ulnar side of each hand an irregular patch of superficial gangrene.

The disease commenced on the evening of November 29, with swelling of the hands, and "rheumatic" pains in the thighs.

On November 30, the temperature was 100° to 100·8°; the face was flushed. Both hands were cold, red, very œdematous, and tender. There were symmetrical eruptions of purpuric character on dorsum, and two larger irregular patches on ulnar side of each hand; whitish in the centre, purplish at the

circumference, with well-defined outlines, and quite anæsthetic. There was a similar but smaller area on the dorsal aspect of the proximal phalanx of each middle finger. There were a few similar spots on the toes of each foot.

There was anæsthesia of the palmar surface of second and third digits, and outer side of the dorsal surface of terminal phalanx of index finger of the right hand, and of the whole of the fifth digit and palmar surface of thumb of left hand. The radial pulse was normal. The urine was normal.

On December 1, the temperature was 101·8° to 98·6°.

December 2.—The œdema has gone.

December 4.—Sensation has returned to the right fingers.

December 6.—Anæsthesia has entirely gone. There is no fresh eruption, the only change being fading of the spots. The temperature has remained normal since December 1.

The diagnosis lies between (1) Raynaud's disease, (2) purpura rheumatica, (3) erythema gangrenosum, the last-named being preferred. The association of the condition with anæsthesia suggests the dependence of the disease upon nerve-lesion.

V.—*Case of Erythema Gangrenosum.* By Sidney Coupland, M.D. *Exhibited December* 9, 1887.

WILLIAM R., æt. 14, an errand-boy, whose previous health had been very good, noticed on Wednesday, November 30, that his right hand was swollen. Next day a patch of discoloration appeared on this hand; the left hand became swollen, and on the following day a "patch" of discoloration appeared on it also.

He was first seen at the Middlesex Hospital on Sunday, December 4. Both hands were very œdematous (especially the dorsum), tender, red, and cold. On the dorsum of the right hand, just above the root of the fourth and fifth fingers, there was an irregular patch of cutaneous gangrene, pale white in centre, purplish towards margins. There was a similar but smaller patch on dorsum of left hand. The temperature was 100°.

December 6.—He was admitted into hospital. The temperature was normal. There was still considerable œdema of

the hands; the patches of symmetrical gangrene remained unchanged.

December 9.—The œdema was nearly gone. Patches were less distinct, slight puckering at their sites.

VI.—*Large Nævi on the Back and Right Buttock.* By F. de Havilland Hall, M.D. *Exhibited January* 27, 1888.

THE man, who is aged 42 years, presents large nævi on the back and right buttock. The nævi consist of three almost distinct masses; the largest occupies the infrascapular and lumbar regions on the right side; it is of an irregular square shape, and measures 11 inches by 11 inches; the whole of the right buttock is covered by a similar growth, which measures 8 by 8½ inches; in the left lumbar region the nævus measures 8 inches horizontally, and 3½ inches vertically. The colour of the nævi is greyish blue, and on first sight the man's back appears as though it had been tattooed. The nævus covering the right buttock is apparently made up of large dilatations of the venous system, and therefore presents a much coarser appearance than the other two masses. The temperature over the nævi is considerably higher than over the rest of the body. The nævi have never caused any inconvenience, and have therefore not required any treatment; they are said to have been noticed at birth, and there is no evidence that they have increased in size of late years.

VII.—*Case of Precocious Affection of the Right Testicle in a Boy five years of age, suffering from Acquired Syphilis: Initial Lesion of Upper Lip: General Eruption.* By T. Colcott Fox, M.B. *Exhibited February* 10, 1888.

THE case is brought forward to show the remarkably precocious implication of the testicle.

Thomas D., æt. 5, is the eldest child of parents married

for six years. After careful inquiry and search no clue to any symptoms of hereditary syphilis can be traced in him. A second child died of "bronchitis" at six months old. A third child was stillborn at seven months, and a fourth child, aged eleven months, is under my care with a characteristic relapsing papular eruption, and other symptoms of hereditary syphilis. No doubt the eldest brother (Thomas) has been inoculated from this baby. The mother has been quite free from syphilitic symptoms, but the father, who is a night workman on some gasworks, declines an interview with me, but presumably he either contracted syphilis between the birth of his second and third children, or he was under the influence of treatment when his eldest child was conceived.

Thomas D. has a well-marked indurated inital lesion on the centre of the upper lip, which the mother has noticed for about two months, enlargement of the related glands, characteristic superficial erosions in the throat, general adenitis, the remains of a general macular and papular eruption, and a moderately but visibly enlarged right testicle, which is uniformly dense, hard, and painless, and the seat apparently of an intertubular fibroid induration or chronic interstitial orchitis.

In hereditary syphilis it is now well known that lesions of the testes are exceedingly frequent, though not commonly of such development as to be appreciated during life. I have met, however, with four or five cases.

The testicle is also one of the organs most frequently attacked in acquired syphilis, about one in thirty or forty cases (Reclus), but cases have not been systematically examined in sufficiently large numbers to give accurate statistics.

Professor Paul Reclus (*De la Syphilis du Testicle*, 1882) says the invasion of the testicle is not rare in the middle of the secondary period, and Fournier gives the second to the fourth year as the time of its maximum frequency. Mr. Hutchinson (*Pathological Society's Transactions*, 1877) gives the period as about midway between the disappearance of what are commonly accounted as secondary symptoms and the appearance of those counted as tertiary. He mentions elsewhere a case of malignant syphilis in which the lesion of the testicle existed with other gummata and the general eruption, and Reclus records the case of a youth, aged 17, who came under observation with a chancre and general eruption on November 24, 1880, and on February, 1881, he was readmitted with glandular enlargement, tonsil ulceration, recurrent papulo-squamous

syphilis, and painful, inflamed, slightly enlarged testicle, which got well under mercury.

Vidal de Cassis saw an enlarged testicle on the fiftieth day; Nélaton and Reclus an interstitial orchitis at three and a half months; Ricord at the fourth and fifth month; Berkeley Hill at end of sixth month, and Curling and Hamilton also noted the early implication of the testicle.

VIII.—*Case of Arrested Growth of Right Ulna by Exostosis near Styloid Process, and Continued Growth of Radius bending round Lower End of Ulna.* By Bernard Roth. *Exhibited February* 10, 1888.

MISS DAISY A., æt. 11¼, is the youngest of nine children living. Father died of diabetes. No history of osseous deformity in the family is obtainable.

The patient had always enjoyed good health except when four years old, when she suffered from spinal curvature for which a steel spinal support was worn for about a year. The mother says the patient has had bony lumps growing out at different parts of the body for several years past, but as they seemed to get smaller again she did not attach much importance to a fresh bony lump which began

Fig. 16 shows the adduction of the hand.

to form near the right wrist a little more than twelve months ago; previously to that time the right hand and forearm were no different from the left. Soon after the bony lump formed the mother observed that the hand was "growing wrong,"

and the deformity has gradually increased up to the present time. The patient has never had the slightest pain in the right wrist or elsewhere.

Present state.—A fairly healthy, intelligent child, with some defect in speech. The right hand is severely adducted, the transverse axis of the wrist being almost parallel with the longitudinal axis of the forearm when supinated as shown in Fig. 16. All the movements of the wrist and forearm are free. The deformity is evidently due to an arrest of the growth of the ulna caused by an exostosis developed near its styloid process, while the lower end of the radius has continued to grow and has carried the hand with it. The right upper arm corresponds exactly with left by measurement. There is an exostosis or osseous outgrowth about one inch from the styloid process of the left ulna, but this has not apparently interfered with its growth. There are exostoses (? osteophytes) on the inner margin of each scapula, also on the inner aspect of upper epiphysis of each tibia and on the outer supra-condyloid ridge of the right femur and on the left internal malleolus.

Measurements:

	Right.		Left.
External condyle of humerus to radial styloid process . . .	8″	...	8″
Internal condyle of humerus to ulnar styloid process	5½″	...	8″
Styloid process of radius to tip of middle finger	6½″	...	6¾″

There are three (?) osteophytes on the anterior aspect of lower end of the right radius; the metatarsal bone of the right little finger is drawn about half an inch higher up towards the wrist.

IX.—*Congenital Hypertrophy of Leg and Thigh.* By W. Pasteur, M.D. *Exhibited February* 10, 1888.

LILY K., æt. 11.

History.—Her parents healthy. She is one of eighteen children, seven of whom are now alive; the others died in

infancy of "wasting diseases." There is no history of syphilis.

Present illness.—The child began to limp when two and a half years of age. The increased size of the left leg was first noticed at the age of three years, since which time she has worn a patten on the right foot; that now in use is about 3 inches deep.

The child's intelligence is well below the average and she is very emotional.

Present condition.—The left lower extremity appears to be uniformly hypertrophied in all its parts. On admission to the North Eastern Children's Hospital there was marked œdema of the leg, accurately limited above by the iliac crest. The skin is harsh and somewhat discoloured in places. A fine venous plexus is visible beneath the skin over the left buttock and thigh. The left leg is generally hotter than the right (1° F.).

Measurements after complete subsidence of the œdema.

	Right.		Left.
Pubic spine to internal malleolus	24½ in.	...	22 in.
Circumference at level of malleolus	8 „	...	7 „
Circumference of calf	11 „	...	9 „
Circumference at condyles of femur	11½ „	...	9½ „
Circumference of thighs	15¾ „	...	12¾ „
Anterior superior iliac spine to median line	7½ „	...	7 „
Anterior superior iliac spine to tuber ischii	9 „	...	8 „
Length of sole to fork between big toe and second	7½ „	...	7 „

X.—*A Case of Traumatic Meningocele.* By A. Quarry Silcock, M.D. *Exhibited February* 24, 1888.

WHEN four months old, the boy who is now 11¼ years of age, fell upon a stone hearth; a "lump" immediately

formed upon the part of the head struck, which has never since disappeared, and has increased in size as he has grown older.

The site and size of the swelling are sufficiently defined by the accompanying photographs (kindly taken by Mr. Collins, the senior house surgeon of the Moorfields Eye Hospital), and may be seen to be limited entirely to the area of the right parietal bone (Plate VII). It is obviously pulsatile, fluctuant, and moderately tense; after prolonged pressure upon it the tenseness and pulsation become less marked, and its prominence diminished. When the sac is thus partially emptied of its contents the finger can be pressed through its edge, and an irregular bony floor is felt. The opening through the calvaria cannot be defined, but, let it be observed, the central portion of the "floor" cannot be explored owing

FIG. 17.—Conformation of the skull in cephal-hydrocele.

to the tenseness of the swelling. Bounding the latter circumferentially are a series of sharp-edged ridges of bone, the outer surfaces of which are pretty smooth and continuous with the outer surface of the surrounding calvaria; they are considerably elevated above its general level, perhaps to the extent of a third to half an inch where they are highest.

The scalp and hair covering the sac of the tumour are natural. The boy exhibits no mental aberrancy whatever; no cerebral symptoms have ever been aroused by pressure upon and partial emptying of the sac. The vision of both eyes is normal, when the hypermetropia (+ 8 D) of which he is the subject is corrected.

It is suggested that the conformation of the calvaria of the

DESCRIPTION OF PLATE VII.

Mr. Silcock's Case of Cephal-hydrocele.

To illustrate the site and size of the tumour.

From Photographs

Dalziel Brothers & Co. lith

present case in the left parietal region may more or less closely resemble that seen in a specimen removed from a child, the subject of meningo-encephalocele, now in the museum of St. Thomas's Hospital (Fig. 17), which was described by Mr. Shattock in the *Pathological Society's Transactions*, vol. xxxvii, p. 367.

*** This case having already been independently described by Mr. Treves (*vide* pages 22—25 of the present volume) the Council requested a Committee of the Society to examine the youth. The following is their Report:—

Your Committee having examined the foregoing case brought before the Society by Mr. Treves on October 14, 1887, and subsequently by Mr. Silcock on February 24, 1888, is of opinion that the tumour is a so-called cephal-hydrocele, that is, a pulsatile tumour containing cerebro-spinal fluid communicating with the interior of the skull by an abnormal opening, the result of an injury.

R. Clement Lucas.
Thomas Smith.
R. J. Godlee.
Robert Wm. Parker.

April 9, 1888.

Cases of this condition have been published, among others, by the following authors:

Billroth. v. Langenbeck's *Archiv für klin. Chirurgie*, vol. iii, 1862.

Giraldès. *Maladies chirurgicales des Enfants*, 1869.

Hayward. The *Lancet*, July 17, 1869.

Lucas. *Guy's Hospital Reports*, 1876, 1878, 1881, 1884.

Emery. *Bulletin de la Société Anatomique*, 1876.

Krausold. v. Langenbeck's *Archiv*, vol. xx. 1877.

Erichsen. American edition, *Science and Art of Surgery*, vol. i, 1878.

Schmitz. Billroth and Lücke, *Deutsche Chirurgie*, part 30, 1880.

Reckitt. The *Lancet*, June 4, 1881.

Weinlechner. *Jahrb. für Kinderheilkunde*, vol. xviii, 1882.

Vivien. *Thesis*, Paris, No. 440, 1883

Conner. *American Journal of the Med. Sciences*, July, 1884.

Smith. *St. Bartholomew's Hospital Reports*, vol. x, 1884.

Godlee. *Transactions of the Pathological Society of London*, vol. xxxvi, 1885.

Makins. *Transactions of the Clinical Society of London*, vol. xx, 1887.

XI.—*A Case of Tuberculous Peritonitis treated by Laparotomy and Drainage.* By Howard Marsh. *Exhibited February* 10, 1888.

Mary S., æt. 10, was admitted into St. Bartholomew's Hospital on July 27, 1887. She had been ill with what her mother called typhoid fever for four months. During this time her abdomen had gradually increased in size, and she had lost flesh and strength, and had recently suffered from difficult breathing. No more precise history could be obtained. On admission, she was wasted and very weak. The abdomen was much enlarged, and the superficial abdominal veins were much distended. The diaphragm was pushed up, and the lower ribs were expanded. There was some œdema of the feet, but no swelling about the face. Urine healthy. Heart-sounds normal. The abdomen was dull on percussion, and fluctuation over a considerable area anteriorly was distinctly marked. On an exploratory puncture being made pus was withdrawn, but it was too thick to pass through a small-sized cannula. On August 1, 5 pints of pus were removed by the aspirator, with very marked relief to respiration. Temperature 101°, pulse 114, very feeble.

August 8.—Though much relieved for some days after the aspiration the patient is now suffering, owing to reaccumulation of pus, from marked dyspnœa, and the abdomen is nearly as large as before the operation. The aspirator was again used, and 80 oz. of pus removed.

August 13.—Abdomen aspirated again, and 36 oz. of pus withdrawn. The patient is still extremely weak; temp. in the morning 98°, in the evening 100°, pulse 116.

August 18.—Twenty-nine ounces of pus drawn off. General condition remains much as before.

September 5.—When I first saw the case (having been out of town), I found the child pale and very emaciated, and so weak that she could not sit up. She had the general appearance of a patient in the advanced stage of tuberculous disease. The abdomen was considerably distended, and the superficial veins were distended and tortuous. Fluctuation was very distinct. As pus had continued to accumulate in spite of repeated aspirations, I made an incision in the middle line, below the umbilicus, and on dividing the abdominal wall

reached a large cavity from which 39 oz. of fœtid pus were removed. The opposite or deep wall of this cavity was formed by coils of intestine matted together by granulation tissue. No close examination, however, was made, as it was feared that some part of the intestine might give way, with the result that fæcal extravasation into the abscess would occur; but the cavity was irrigated with a weak solution of iodine (1 part of tincture of iodine in 500 parts of water), and a drainage-tube was introduced. Great relief followed the operation; all difficulty of breathing passed off; the temperature, which had ranged between normal and 101°, now remained below 98·8°.

September 10.—The child is regaining flesh and strength. The amount of discharge, which was free after the incision, is diminishing; the temperature remains always below 98·8°.

September 15.—The temperature rose last night to 103°, apparently from a collection of pus on the left hypochondriac region; this was washed out with iodine solution to-day.

September 22.—There is still a tendency to the retention of pus in a deep part of the cavity on the left side. The temperature is 101°. The abscess sac is daily irrigated with iodine water. She is much stronger, is regaining her colour, and takes her food readily.

September 30.—The temperature is normal. The patient has a very large appetite, and is quickly gaining flesh. No pus is removed now on washing out the cavity, and the drainage-tube has been shortened to about 1¼ inches. She now sits up in bed a good deal during the day, and has the appearance of being convalescent.

October 8.—The temperature rose yesterday to 103°; to-day pus has been washed out from the left hypochondriac region. The abdomen on that side is rather more distended. General condition very good.

From this period the patient steadily, though slowly, recovered. No pus was removed after October 30. The drainage-tube was discontinued on November 10, and the wound was soundly healed by November 30, when she was sent to the Convalescent Hospital at Swanley, apparently in perfectly good general health. She is still (June, 1888) in good health, and has had no return of any abdominal symptoms.

Remarks.—No microscopic examination of the pus or of the lining membrane of the cavity was made, so that there is no direct evidence that this was a case of tuberculous peritonitis. Yet I believe that it was of this nature. The course

of the illness was similar to that which has been frequently observed in instances of undoubted tuberculous origin, and although recovery seemed at one time highly improbable it was no more than has been met with in many well-authenticated cases.

The collection of pus was enclosed anteriorly by the abdominal wall and peritoneum, posteriorly by coils of the small intestine uniformly matted together. The case was an excellent example of the necessity, in these instances, of providing free drainage. The evacuation of pus had the immediate result of reducing the temperature to normal, but whenever any retention of matter occurred the temperature immediately rose, to fall again, however, as soon as pus was washed out from the recess in which it had collected. The use of a very weak solution of iodine in water proved very useful for irrigation. At one period a coil of small intestine, covered with vascular granulations, presented in the wound, but receded as the latter closed, and no difficulty was experienced.

XII.—*Case of an Infant showing signs of Rickets, which had probably started during Intra-uterine Life, continued after Birth for a time, and then undergone Partial Retrogression.* By Thomas Barlow, M.D. *Exhibited April* 13, 1888.

MARY W. was brought to me when she was ten weeks old with the following history :—The child had been born head first, but with some difficulty on account of the deformity of the lower limbs, which were considerably bowed. From her birth the lower limbs had been very tender whenever the child was washed. When she was six weeks old the middle of her right arm was found to be very tender and a little swollen, and the day before she was brought to me there was also a little tenderness below the left shoulder. The nurse and the mother had both observed that the back of the infant's head was "soft" from the very first.

A few red patches were seen on the face and chest when the child was born, but I could not obtain any satisfactory account of their further progress. The child had always cried well and taken the breast well, and had never "snuffled." There had been no fall or injury.

When I first saw the child she presented the following signs in respect to the osseous system:—There were slight frontal bosses. The anterior fontanelle held two finger-tips each way; the posterior fontanelle was well marked, and held at least one finger tip; the sagittal suture was wide and jagged; the upper part of the occiput was extremely flexible. In the lambdoid suture there appeared to be several small bony plates. There were well-marked lateral fontanelles above and behind each ear.

The ribs showed well-marked beads in front, and also decided posterior beads on several ribs about corresponding with the position of the angles.

The right arm dropped like a case of "pseudo-paralysis;" there was some thickening of the middle of the humerus, and great tenderness on pressure, but no alteration of the axis of the limb. There was a little thickening just below the head of the left humerus.

The lower limbs were very remarkable. She moved them, but not very freely; she winced when they were handled, but this, the mother said, was decidedly less marked than it had been. Both femora were arched forwards, presenting a rounded convexity; the tibiæ were also arched forwards for the most part, but there was a sudden bend backwards just above the ankle. The tibiæ were also laterally compressed. The deformity was greater on the right side than on the left. The lower epiphyses of the femora, and both upper and lower epiphyses of the tibiæ, were enlarged. The appearance of these limbs was extremely like that of many museum specimens of severe rickets.

The child was poorly nourished, but there was at that time no evidence of congenital syphilis. Three days afterwards the spleen became just palpable, but this was the only suspicious sign, and it was no longer present a fortnight later.

I subsequently examined the patient's two brothers (aged 8 and 5 respectively) and one sister (aged 6), but with negative results. They were undergrown, poorly-nourished children, and the youngest had rickety tibiæ, but there was no evidence of syphilis.

I had ordered the infant one grain of grey powder thrice

daily for a fortnight, but there being no conclusive evidence I did not persevere with it, and subsequently only cod-liver oil was given in the way of medicine. The mother had no syphilitic signs or history, and although a poorly-fed and weakly woman she was ordered to continue to suckle the baby.

To sum up the progress of the case from when it was first seen till the present date it may be briefly stated that the tenderness of the arm swellings, gradually subsided, and that on the right side there now only remains some irregular bony thickening in the middle of the humerus, whilst the slight swelling below the left shoulder has vanished. The beads on the ribs are greatly diminished. The tenderness of the lower limbs soon vanished, and the deformity, though still marked, is decidedly lessened.

Remarks.—Taking the early history and the subsequent progress of this child together, I believe the view which presents fewest difficulties as to its nature is that the infant was the subject of rickets when *in utero*, that in consequence the lower limbs became deformed, and that the ossification of the skull was delayed; that after birth the rickety diathesis continued for a time, showing itself in very early beading of the ribs in the usual situations, and also in the posterior beads near the angles; that the lesion of the middle of the right humerus was a green-stick fracture, and that there was a slighter lesion of the same kind of the left humerus, and, finally, that the diminution of the deformity of the lower limbs, along with the lessening of the beads, &c., shows a partial retrogression which is quite in keeping with the natural history of rickets.

The accounts given in the textbooks of congenital rickets are not very satisfactory. Some of the cases described as such depend on a malformation of the primordial cartilage, which, so far from proliferating excessively, as in true rickets, does not even undergo the preliminary "row formation," and the whole development and growth of the long bones are derived exclusively from the fibrous tissue elements. Such cases are outside the category of rickets proper, and have been provisionally called "fœtal cretinism." But it seems tolerably certain that a true fœtal rickets does occur. Some years ago I was much puzzled in making post-mortem examinations of fœtuses on finding several cases of slight but definite beads at the anterior ends of the ribs.

During the last year the question has been exhaustively

investigated by Dr. Felix Schwarz,* of Vienna, and Dr. Lauro,† at Naples, who have shown, both clinically and pathologically, the frequent occurrence of lesions in newborn infants which are strictly comparable with the manifestations of rickets as met with at a later period.

I have brought this case, as in some sort, a pendant to the group of cases described in Dr. Samuel West's paper on acute periosteal swellings in several young infants of the same family (*vide* p. 209). I believe the most reasonable hypothesis to be, that the rickety process had been initiated in intra-uterine life, and had continued for a time after birth, and then that its products had undergone involution.

That these cases hardly come within the category of what the German writers call "acute rickets," but which Dr. Cheadle and I have given reasons for believing are a combination of rickets and scurvy, is, I think, evident from the fact that there are no blood extravasations into or sponginess of the gums or blood extravasations elsewhere, that the remarkable cachexia is wanting, that the localisation of the bone lesions is much more limited, and that the antecedent food conditions, breast milk as distinguished from artificial food, are different.

XIII.—*Case of Bromide of Potassium Eruption in a Suckling Infant, to whose Mother the Drug was being administered for Epilepsy.* By Shirley F. Murphy. *Exhibited April* 13, 1888.

I HAVE to thank Dr. Robert Cory for enabling me to exhibit this case before the Clinical Society.

The child, Dorothy M., was vaccinated by him on December 29, 1887, at the Animal Vaccine Establishment. The child was then aged five months and appeared perfectly healthy. On January 5, she was brought for inspection, and had then five normal vaccine vesicles on the arm. Two days later supernumerary vesicles appeared on the edges of the original vesicles, and an eruption of vaccinia lichen appeared on the face, arms, and back. On January 24, the child was

* "Zur Frage der Rachitis der Neugeborenen," *Medizinische Jahrbücher*, viii Heft, 1887. p. 497.

† Brief abstract of conclusions in *Archivio di Patolog. infant.*, Sept., 1887.

again brought to the station. The arm had not healed, but the crusts had fallen, leaving small superficial ulcers at the place of vaccination and small crusts situated where the eruption had appeared. The arm was ordered to be dressed with zinc ointment, and on January 28 was healing rapidly, the eruption fast disappearing.

On April 3, the child was again brought to the station, and came under my observation in Dr. Cory's absence. The mother stated that some six weeeks before (about February 21) an eruption like little fleshy blisters had shown itself on the scalp, forehead, and face. The eruption had increased gradually and showed no signs of disappearance; at the same time the arm had again become slightly sore, but had since completely healed. On this day, April 3, there was scattered over the child's scalp, forehead, and face an eruption resembling vesicles, these varying in size from that of a hempseed to a sixpenny piece; the larger had a definite bright red base, while a few were surmounted by brown crusts, especially those which were stated to be of older date. The cuticle covering some was absent at points near the edge, showing a bright red surface through the white cuticle which covered it. The character of the eruption was so strongly suggestive of bromism that I questioned the mother as to any drugs the child might have taken, but was assured it had taken no medicine whatever. She stated, however, that she was herself an epileptic and that she had frequently taken bromide of potassium, the dose being ten grains three times a day, continuing this for some days together; she then allowed an interval of a few days to elapse, and again returned to the treatment. This had been her habit before and since the birth of the child, which had been wholly fed at the breast. She recollects that she was taking bromide at the time the eruption appeared on the child in February, but that she had not taken any for a fortnight before April 3, when this eruption was first seen by myself.

On April 6, when the child was again seen, the eruption was more crusted, and the red points previously mentioned less obvious, and these changes were still more marked when the child was exhibited before the Society on April 13. The child was weaned after April 13.

On June 22, the child was visited, and it was then ascertained that the eruption had gradually disappeared, the crusts falling and the redness fading. Some obvious brownish-red stains, however, still marked the site which the eruption had

previously occupied. These were still present when the child was again visited on July 18.

On April 13, the mother brought me 2 oz. of her milk, which she had drawn off after having at my request taken the bromide during four or five days previously in the same proportion as before. Dr. Harald Faber, analytical chemist, kindly examined this milk for bromine, but found no evidence of its presence. The mother herself had suffered from some form of "pimply" eruption, which she attributed to the bromide taken by her, a view in which she said her doctors concurred.

The interest attaching to this case, which I believe to be one of bromism, the bromine being received in the mother's milk, is the rarity of its occurrence under these circumstances. Dr. T. Colcott Fox has been good enough to send me the particulars of a similar case under the observation of his brother, the late Dr. Tilbury Fox, at University College Hospital, an account of which was published in the *Lancet* of November 7, 1874. In this case the child was three months of age when the eruption appeared, and the mother said it had not been given bromide of potassium, but added, "I have been taking it for the last eighteen or twenty months for epilepsy." The mother then discontinued the bromide, and the disease at once began to disappear, by the subsidence of the spots and patches. She resumed the medicine, and very speedily a fresh outbreak of the disease occurred. The mother had not herself had an eruption of the skin.

XIV.—*Case of Congenital Deformity of Femora, absence of Tibiæ, and Malformation of the Feet and Hands.* By W. Henry White, M.D., and Henry Baker. *Exhibited May* 25, 1888.

Jessie H., æt. 4½, was admitted under our care into the Cripples' Nursery in March 1888, having been recommended for admission by Dr. J. Percy Gabb, of Guildford, who kindly furnishes the following history:

1. Boy, æt. 6, no malformation.
2. *Jessie* (the subject of this paper).
3. Girl, no malformation.
4. Boy, no malformation.

5. Girl, æt. 5 months, lower limbs perfect. *Right hand.*—Middle finger and anterior half of metacarpal bone absent. Thumb and index finger united as far as terminal phalangeal joint. *Left hand.*—Whole of metacarpal bone of middle finger absent.

Father, æt. 38, is the only child of his parents, who are both living and without any deformity. He is gouty.

Mother, æt. 38, has two sisters and three brothers, all living and healthy. Her *elder sister* has had ten children, six living now. The eldest of these, a boy, had partial harelip, no cleft palate; and one of them, a girl, had two thumbs on right hand. None of the others had any deformity; no deformity known in other relatives.

The congenital deformities from which this child is suffering are well shown in the accompanying drawings, and may be described as follows:

Right hand.—Thumb and little finger perfect. All the other fingers, with their corresponding metacarpal bones, are absent. There is a wide, deep cleft down to the carpal bones

FIG. 18.—Shows the condition of the hands.

Left hand.—Thumb and first finger perfect. Little finger perfect. Between these there is a deep cleft extending very nearly down to the carpal bones. The fourth metacarpal bone and its corresponding finger are absent. The third metacarpal bone is a little short and rounded off and has no finger attached to it.

Both legs are alike, and their condition is as follows:—The tibia is entirely absent. The upper end of the fibula is jointed to the lower and under surface of the femur, three eighths of an inch from the end, which is rounded off. No condyles are to be felt. This condition causes the end of the femur to project five eighths of an inch. The legs are flexed at a right angle and cannot be extended, but the child can voluntarily flex them.

The *feet* are alike on both sides and are in the position of extreme talipes equino-varus; the soles of the feet are twisted in such a way that they look directly upwards.

FIG. 19.—Shows the condition of the feet.

The *toes* are of the proper number, but the great toes are short and ill developed. The tendo Achillis on each side is much contracted as is also the plantar fascia.

REPORT

OF A

COMMITTEE OF THE SOCIETY NOMINATED DECEMBER 14, 1883,

TO INVESTIGATE THE SUBJECT OF

MYXŒDEMA.

Owing to its importance and great length the Council has decided that the full Report shall be issued as a separate volume.

THE following are the final conclusions arrived at by the Committee:

1. That myxœdema is a well-defined disease.

2. That the disease affects women much more frequently than men; and that the subjects are, for the most part, of middle age.

3. That clinical and pathological observations, respectively, indicate in a decisive way, that the one condition common to all cases is destructive change of the thyroid gland.

4. That the most common form of destructive change of the thyroid gland consists in the substitution of a delicate fibrous tissue for the proper glandular structure.

5. That interstitial development of fibrous tissue is also observed very frequently in the skin, and, with much less frequency, in the viscera; the appearances presented by this tissue being suggestive of an irritative or inflammatory process.

6. That pathological observation, while showing cause for the changes in the skin observed during life, for the falling off of the hair, and the loss of the teeth, for the increased

bulk of the body, as due to the excess of subcutaneous fat, affords no explanation of the affections of speech, movement, sensation, consciousness, and intellect, which form a large part of the symptoms of the disease.

7. That chemical examination of the comparatively few available cases fails to show the general existence of an excess of mucin in the tissues adequately corresponding to the amount recorded in the first observation, but that this discrepancy may be, in part, attributed to the fact that tumefaction of the integuments, although generally characteristic of myxœdema, varies considerably throughout the course of the disease, and often disappears shortly before death.

8. That in experiments made upon animals, particularly on monkeys, symptoms resembling in a very close and remarkable way those of myxœdema have followed complete removal of the thyroid gland, performed under antiseptic precautions, and with, as far as could be ascertained, no injury to the adjacent nerves or to the trachea.

9. That in such experimental cases a large excess of mucin has been found to be present in the skin, fibrous tissues, blood, and salivary glands; in particular the parotid gland, normally containing no mucin, has presented that substance in quantities corresponding to what would be ordinarily found in the submaxillary gland.

10. That the full analysis of the results of the removal of the thyroid gland in man demonstrates, in an important proportion of the cases, the fact of the subsequent development of symptoms exactly corresponding with those of myxœdema.

11. That in no inconsiderable number of cases the operation has not been known to have been followed by such symptoms; the apparent immunity being in many cases probably due to the presence and subsequent development of accessory thyroid glands, or to accidentally incomplete removal, or to insufficiently long observation of the patients after operation.

12. That, whereas injury to the trachea, atrophy of the trachea, injury of the recurrent laryngeal nerves, injury of the cervical sympathetic, and endemic influences, have been by various observers supposed to be the true causes of experimental or of operative myxœdema (cachexia strumipriva), there is, in the first place, no evidence to show that, of the numerous and various surgical operations performed on the neck and throat, involving various organs and tissues, any, save those in which the thyroid gland has been removed, have been followed by the symptoms under consideration; that in

many of the operations on man, and in most, if not all, of the experimental operations made by Professor Horsley on monkeys and other animals, this procedure avoided all injury of surrounding parts, and was perfectly aseptic; that myxœdema has followed removal of the thyroid gland in persons neither living in, nor having lived in, localities the seat of endemic cretinism; that, therefore, the positive evidence on this point vastly outweighs the negative; and that it appears strongly proved that myxœdema is frequently produced by the removal, as well as by the pathological destruction, of the thyroid gland.

13. That whereas, according to Clause 2, in myxœdema, women are much more numerously affected than men, in the operative form of myxœdema no important numerical difference is observed.

14. That a general review of symptoms and pathology leads to the belief that the disease described under the name of myxœdema, as observed in adults, is practically the same disease as that named sporadic cretinism when affecting children; that myxœdema is probably identical with cachexia strumipriva; and that a very close affinity exists between myxœdema and endemic cretinism.

15. That while these several conditions appear, in the main, to depend on, or to be associated with, destruction or loss of the function of the thyroid gland, the ultimate cause of such destruction or loss is at present not evident.

William M. Ord, *Chairman.*

John Cavafy.	Victor Horsley.
Arthur E. Durham.	Sydney Jones.
Rickman J. Godlee.	Stephen Mackenzie.
James F. Goodhart.	Felix Semon.
W. D. Halliburton.	W. Pugin Thornton.
Warrington Haward.	W. B. Hadden, *Hon. Secretary.*

*** A copy of the full Report will be sent to each member of the Society in due course.

REPORT

OF A

COMMITTEE OF THE SOCIETY NOMINATED MARCH 11, 1887,

TO CONSIDER THE QUESTION OF

LATERAL CURVATURE OF THE SPINE.

After deliberation, the Committee decided to limit the scope of the inquiry to the treatment of lateral curvature; and as to the method of the inquiry it was decided to apply to a few gentlemen representing the various modes of treatment at present in vogue, for permission to see their cases and practice.

THE Committee have first to acknowledge their obligations to all those gentlemen who have been good enough to demonstrate their modes of treatment or otherwise assist in the inquiry. Their especial thanks are due to Mr. Henry Baker, Mr. Barwell, Mr. Golding-Bird, and Mr. Bernard Roth, who have shown cases before, during, and after treatment.

In a disease like lateral curvature of the spine, dependent as it is upon many causes, occurring as it does at very varying ages, and coming under the surgeon's notice at different stages of its development, there can be no hard-and-fast lines of treatment. That plan of treatment which would prove highly beneficial to a young woman of eighteen or twenty years might be altogether impracticable or useless in the case of a child four or five years of age; for the former, appreciating the *rationale* of suggested gymnastic exercises (for instance), can materially aid in carrying it out, while a young

and weakly child, though quite amenable to the treatment for a while, reverts to vicious postures as soon as the treatment is discontinued. Again, the plan of treatment which might improve curvature in an early stage might be quite useless in a confirmed case.

Cases without osseous deformity.—The Committee feel that while gymnastic exercises prove very useful in a great many cases of pronounced lateral curvature by improving the muscular power and relieving pain, it is essentially in cases without osseous deformity, and when the curvature depends on flaccid muscles, relaxed ligaments, and on a general want of tone on the system, that this plan of treatment is indicated, most likely to prove beneficial, and even curative.

Moreover, it seems not improbable that the use of mechanical supports in such cases tends to maintain the curvature, by preventing or limiting voluntary muscular action, and thus withdrawing from the muscles their natural stimulus to action and healthy tone.

On the other hand, there are cases of lateral curvature in children, too young to appreciate the dangers of faulty positions, and too weakly to keep themselves in improved positions after drilling without some extraneous aid. In such cases some means additional to exercises may be necessary to prevent the assumption of these faulty positions.

Cases with osseous deformity.—For cases in which there is more or less well-marked osseous deformity, treatment must necessarily vary according to the special needs of the case, a cure of the deformity, or even much alleviation, being quite impossible. In many of these cases, the patient complains of pain, which pain is relieved by the use of a well-adjusted support, a fact to which the Committee can testify from personal observation. On the other hand, the Committee have seen equal relief to pain afforded by gymnastic exercises without the use of mechanical supports. It seems very doubtful whether any real or lasting improvement in the deformity is procurable by any method of treatment whatever in the later stages of such cases.

General measures.—A great majority of cases of lateral curvature appear to depend on a lowered standard of health. In undertaking the treatment of any case, it is of the first importance to direct attention to this fact with a view to meet these individual requirements. In all cases where a lateral curvature depends on still active causes, as, for instance, on over-much standing in business, vicious postures

entailed by ill-constructed school desks, on inequality in the length of the lower limbs, or on myopia, these causes must, in each case, be removed or neutralised before any plan of treatment can be expected to prove beneficial. In some few cases dependent on congenital deformity of the spinal column (deficiency or redundancy of half a vertebra), and in some chronic cases of empyema, the condition is almost irremediable.

The amount of improvement which may be hoped for in any given case may not unsafely be gauged by the improvement which the patient can voluntarily effect in his or her position when first seen.

Among the cases examined, the Committee have been struck by the fact, not generally recognised, that in a large proportion the dorsal curve has been towards the left, notwithstanding that the patients were not left-handed.

C. Heath.
Walter Rivington.
Howard Marsh.
Warrington Haward.
Robert Wm. Parker.

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